

A MAN FOR ALL REASON:

GENERAL LARRY D. WELCH, 12th CHIEF OF STAFF, US AIR FORCE

BY

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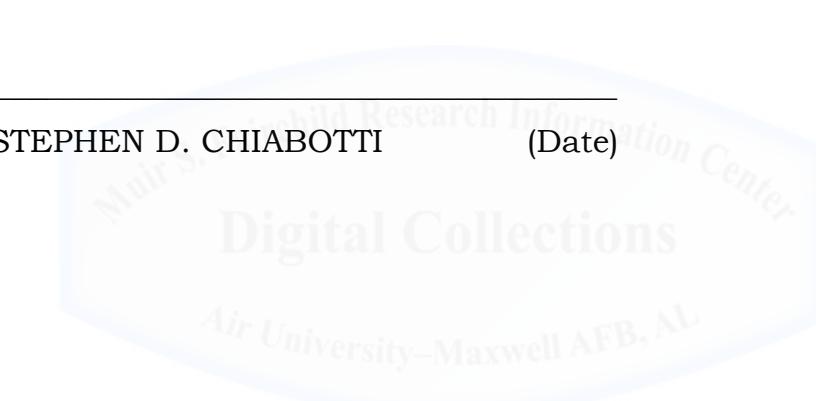
The undersigned certify that this thesis meets master's-level standards of research, argumentation, and expression.

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ABSTRACT

This study examines General Larry D. Welch as the 12th Chief of Staff of the United States Air Force, from 1986 through 1990. The author reviews the formative experiences during the professional development of Welch from his enlistment in the Army National Guard until his assumption of command as the Chief. During Welch's tenure, many significant events transpired, from the dramatic end to the Cold War to the reforms of the Goldwater-Nichols Department of Defense Reorganization Act. Welch served at a time of significant change within the Air Force in response to new trends in the domestic and international environment. Welch participated in both strategic arms modernization and arms control during his tenure, shaping the future security environment and helping to bring about an end to the Cold War. He held sole responsibility for implementation of the Goldwater-Nichols Act within the Air Force. Further, he identified the need to enhance the development of future leaders of the Air Force, manifested in his reforms of the Officer Evaluation System and Professional Military Education. The passage of time has provided a lens through which to evaluate the specific contributions of Welch as Chief. Reviewing the 20 years since his retirement provides perspective from which to conduct an objective analysis of his effectiveness in posturing the Air Force for the future. The final section of this study provides analysis of Welch as the 12th Chief of Staff, and examines the lessons that should be derived from his leadership.

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INTRODUCTION

Since the establishment of the United States Air Force on 18 September 1947, 19 men have borne the responsibility of leading the organization as its Chief of Staff. The position has evolved significantly since its founding. Each Chief carried the responsibility for organizing, training, and equipping the force to provide for the common defense. This study evaluates the particular contributions of one of those men, General Larry D. Welch, the 12th Chief of Staff.

Examining Welch's tenure as Chief is significant because of the dramatic changes in the international environment that took place in the years immediately following. With the dissolution of the Soviet Union in 1991, the Air Force had to confront a greatly altered strategic nuclear environment. The Air Force's efforts during the 45 years of the Cold War had contributed to the prevention of a great-power war between the US and the Soviet Union. The dawn of the 1990s ushered in a new era. Thus, this study examines Larry Welch and an Air Force in transition.

Welch served as Chief of Staff from 1 July 1986 until 1 July 1990, a pivotal period for both the Air Force and the nation. The Department of Defense (DOD) faced steadily declining budgets that forced reductions in programs created during President Ronald Reagan's defense buildup from 1980 through 1983. Also during the late 1980s, the relationship between the US and the Soviet Union changed dramatically, sparking both new negotiations and treaties. Furthermore, the Goldwater-Nichols Defense Reorganization Act of 1986 significantly altered the relationships among the major actors within the DOD. Welch had to deal with all these issues. Additionally, Welch took steps to correct what he perceived to be a growing tendency toward careerism among Air Force officers. This study analyzes Welch's effectiveness in navigating the challenges he

faced during this period and evaluates how well he postured the Air Force for its post-Cold War future.

The first area studied is Welch's effort both to modernize and reduce the Air Force's strategic arms. General Welch inherited the modernization programs begun under the Reagan Administration, but he was forced to continue them with reduced budgets. He supported fielding of the B-1B Bomber and the Peacekeeper Inter-Continental Ballistic Missile (ICBM), as well as the continued development of the B-2 Stealth Bomber and the Small ICBM (SICBM). The Reagan Administration believed each of these systems was critical in the effort to keep America strategically prepared, thus enabling continued discussion of arms control. In his capacity as Chief, General Welch participated in negotiations for arms control, including the Intermediate-range Nuclear Forces (INF) Treaty and the Strategic Arms Reduction Talks (START). While Welch had little control over the national objectives in this area, he had the enormous responsibility of providing a capable strategic deterrent with finite resources and within a framework of multiple constraints and restraints.

The second element assessed during Welch's tenure is his effort to implement the Goldwater-Nichols Department of Defense Reorganization Act of 1986. Arguably the most sweeping change within the DOD since the National Security Act of 1947, the Goldwater-Nichols Act presented the Air Force with several major challenges. It mandated the creation and tracking of Joint Service Officer (JSO) requirements; limited the role of service secretaries and chiefs to that of organizing, training, and equipping their forces; established clear combatant command authority through Joint Force Commanders (JFC); and levied new educational requirements on the services. Welch had little to do with establishing the provisions of the Goldwater-Nichols Act, but he had full responsibility for their successful implementation within the Air Force.

The final initiative examined during General Welch's tenure as Chief of Staff is his reform of the Officer Evaluation System (OES) and Officer Professional Development (OPD). Prior to becoming the Chief, Welch had concluded that careerism in the officer corps was a problem and that the OES did not identify the most deserving officers for promotion. He was determined to correct these problems. Welch also identified the need to reform officer Professional Military Education (PME) as part of the OPD system. He directed the founding of the School of Advanced Airpower Studies (SAAS) and the Joint Flag Officer Warfighting Course (JFOWC). He also set in motion curriculum and faculty reforms at the major PME schools. These endeavors brought together Welch's desire to enhance officer development.

Welch's leadership as Chief of Staff will be analyzed using a widely accepted model of strategy. Among others, Harry Yarger has described strategy as "a disciplined intellectual process with clearly defined outputs of ends, ways, and means that serve national political purpose and policy."¹ The ends and the means for Welch were largely fixed. The mission of the Air Force as Welch defined it constituted the ends, while the means were the resources available to him. Colin Gray uses a similar construct, describing the realm of strategy as the "relationship between means and ends."² Ways are the crucial part of strategy, as they connect the means with the ends. But the ways are always developed within certain limits. Those limits will be addressed as constraints and restraints. Constraints are those things a leader must do in matching means to ends. Welch was constrained to implement the Goldwater-Nichols Act and to support the Reagan Administration's strategic-arms modernization program. Restraints are those things a leader must not do in matching means to ends. Welch was restrained

¹ Harry, R. Yarger, *Strategy and the National Security Professional: Strategic Thinking and Strategy Formulation in the 21st Century* (Westport, CT: Praeger, 2008), 9.

² Colin S. Gray, *Explorations in Strategy* (Westport, CT: Praeger, 1996), 4.

from exceeding his Congressionally authorized budget and service end-strength. The measure of Welch's performance derives from the alignment of his envisioned ends with national policy and his ability to produce ways to match means with ends.

Welch developed a clear definition of the ends he faced while serving as Chief. Everett Dolman has argued that strategy is not a thing, but a product of the imagination. "It is about the future, and above all it is about change."³ Welch believed the essential missions of the Air Force were to provide for the nation's strategic nuclear deterrence and to organize, train, and equip forces to support the joint fight.⁴ As Yarger suggests, the strategy Welch pursued could not be captured by a specific end-state, but by a continuing pursuit of a better Air Force. This pursuit involved many initiatives of which three are the subject of this thesis.

The means at Welch's disposal were his resources, both tangible and intangible.⁵ The budget reductions of the late 1980s presented significant challenges for those charged with leading the armed services, limiting both resources and options. Walter Boyne characterized the climate as requiring "some of the most farsighted - and in many ways difficult - planning in Air Force history."⁶ Boyne credited Welch as being just the man capable of performing this task. Welch and his predecessor, General Charles A. Gabriel, recognized the need for significant reductions in force size to keep the Reagan Administration's

³ Everett Carl Dolman, *Pure Strategy: Power and Principle in the Space and Information Age* (New York: Frank Cass, 2005), 1.

⁴ Gen Larry D. Welch, interview by the author, 22 February 2012.

⁵ Yarger provided examples of both tangible and intangible resources available to the strategist. Tangible resources include forces, people, equipment, money, and facilities. Intangible resources included culture, national will, international goodwill, courage, intellect, and fanaticism. Yarger, *Strategy and the National Security Professional*, 144-145.

⁶ William T. Y'Blood, "Metamorphosis: The Air Force Approaches the Next Century," in *Winged Shield, Winged Sword: A History of the United States Air Force*, vol. 2, ed. Bernard C. Nalty (Washington, DC: Air Force History and Museums Program, 1997), 538.

modernization initiatives on track.⁷ This involved trading people for things. This study will assess the wisdom of that tradeoff. One intangible resource at Welch's disposal was the quality of Air Force personnel. Welch invested in both education and evaluation to improve the quality of the Air Force's officers, thereby attempting to increase the value of that intangible resource.

Despite the significance of the events following Welch's tenure, nothing in the literature focuses directly on either him or his legacy as Chief of Staff.⁸ Secretary of the Air Force Donald B. Rice commented at Welch's retirement: "During the last four years, General Welch has helped shape more history than most people see in a lifetime."⁹ Rice highlighted Welch's involvement in treaty negotiations with the Soviet Union in addition to his notable restructuring of officer professional development.¹⁰ One can only hypothesize about the lack of publications treating Welch to date. This study aims to provide an initial contribution to the literature about General Larry D. Welch, a man in a position of significant influence immediately preceding a historical pivot point.

Two important works about the history of the Air Force provide some insight into the challenges Welch faced as Chief. Both give brief glimpses of Welch and his leadership. Bernard C. Nalty's *Winged Shield, Winged Sword: A History of the United States Air Force, Volume II*, includes three articles chronicling Air Force actions between 1982 and 1997.¹¹ Walter J. Boyne's *Beyond the Wild Blue: A History of the U.S. Air Force* includes three chapters covering service history between the end of

⁷ Walter J. Boyne, *Beyond the Wild Blue: A History of the U.S. Air Force* (New York: St. Martin's Griffin, 1997), 251.

⁸ This study is the first time Welch has cooperated with any effort to examine the years of his senior service, other than the official oral history project.

⁹ John Ginovsky, "AF pulls out all the stops for Welch send-off," *Air Force Times* 50, no. 48 (9 July 1990): 16.

¹⁰ Ginovsky, "AF pulls out all the stops for Welch send-off," 16.

¹¹ *Winged Shield, Winged Sword: A History of the United States Air Force*, vol. 2, ed. Bernard C. Nalty (Washington, DC: Air Force History and Museums Program, 1997).

Vietnam and the mid-1990s.¹² Again, brief glimpses of Welch appear, along with a good characterization of the challenges he faced as Chief.

Given the limited availability of secondary sources, the evidence for this study will come largely from three categories of primary-source material: manuscripts and correspondence, journal and newspaper articles providing contextual information, and personal interviews. The manuscripts and correspondence come primarily from Air Force Historical Research Agency (AFHRA) documents by and about Welch. These include Welch's extended interview conducted as part of the AFHRA's oral history project. Articles and periodicals including contextual information encompass open-source reporting, such as journals and newspapers, as well as extensive literature on nuclear strategy and force posture found in multiple issues of *International Security*. The final body of evidence includes interviews conducted by the author with Welch, General Charles G. Boyd, General John A. Shaud, and General Gilmary Michael Hostage, III.

This study begins with a brief biographical sketch that examines Welch's Air Force career prior to his becoming Chief of Staff. The sketch starts with his enlistment in the Kansas National Guard in 1951 and culminates with his assignment as Commander-in-Chief of Strategic Air Command (CINCSAC) in 1986. The sources for the biographical sketch are oral histories and memoirs that are somewhat subjective but provide an informative backdrop from which to view Welch as Chief. This investigation provides the reader with an understanding of Welch's professional development and his approach to major Air Force issues.

Following the biographical sketch, the study will thematically analyze Welch's leadership as Chief in the areas previously mentioned. The first issue addressed is strategic arms modernization and arms control, representing the issue of greatest significance to the country,

¹² Walter J. Boyne, *Beyond the Wild Blue: A History of the U.S. Air Force* (New York: St. Martin's Griffin, 1997).

arguably existential in nature. The second is implementation of the Goldwater-Nichols Act, characterizing a national interest in the improvement of the DOD. The third is the reform of OES and OPD representing Welch's personal initiatives to better the Air Force.

The full consequences of a Chief's tenure of service cannot be known for many years. Thus, this study will examine the impact of Welch's work at the completion of his tenure and at the end of June 2010, twenty years after he retired. The analysis will explore how the reforms that Welch put in place in the areas of strategic arms, implementation of the Goldwater-Nichols Act, and officer development played out both in the near-term and long-term. This analysis should provide a useful standard by which to assess the importance of Welch's accomplishments as Chief of Staff.

The study will conclude with summary insights about Welch's effectiveness, as well as the reasons for his successes and failures. To begin the analysis, a brief review of Welch's professional development will examine the formative influences on his approach to leading the Air Force.

Chapter 1

The Education of a Professional, 1951-1986

Reflecting on his career at age 77, Welch asserted that his path to the top had been rare and was probably not possible in the 2012 Air Force.¹ Welch began his service by enlisting in a Liberal, Kansas, Army National Guard unit in October 1951. He later said it was a great honor to be asked to join Battery B of the 161st Armored Field Artillery, one that he received while still in high school.² When Welch joined the 161st, his journey was just starting. To rise from his humble beginnings to leading the Air Force as its Chief of Staff was indeed rare.³

Welch graduated from high school planning to become a civil engineer by attending the University of Wichita.⁴ His interest in civil engineering quickly faded, leading him to wandering desires and various degree tracks. His intention to study geology took him to the University of Houston.⁵ There Welch quickly realized he had not made a mature decision about his future, so he dropped out of college and received a discharge from the Army National Guard in order to join the Air Force.⁶ After scoring 25 out of 25 on the entrance exam, he began his Air Force career as a basic airman.⁷ He joined the 3725th Basic Military Training

¹ Gen Larry D. Welch, interview by the author, 22 February 2012.

² Oral History Interview of Gen Larry D. Welch by Hugh N. Ahmann and Dr. Daniel L. Haulman, November 1993, October 1994, May 1997, and May 2000. Typed transcript, p.15, K239.0512-2126, IRIS No. 01157777, in USAF Collection, AFHRA.

³ Two other Air Force Chiefs of Staff had enlisted service in the National Guard prior to joining the Air Force. They were Gen Brown and Gen Twining. Gen Welch is the only Chief to have begun his career in the Air Force as an enlisted Airman.

⁴ Welch, interview by Ahmann and Haulman, transcript, 14.

⁵ Welch, interview by Ahmann and Haulman, transcript, 15-17.

⁶ Jim Bexfield and Bob Sheldon, "Military Operations Research Society (MORS) Oral History Project Interview of General Larry D. Welch, US Air Force, *Military Operations Research* 9, no. 4 (2004): 8.

⁷ Welch, interview by Ahmann and Haulman, transcript, 18.

Squadron in November 1953, the beginning of almost 37 years of service in the Air Force.⁸

Launching a Career

Welch's enlisted time in the Air Force was brief. Upon graduation from basic training, he remained at Lackland AFB as an assistant Tactical Instructor (TI). This assignment came both from a delay in his electronics school starting date and his performance as a student flight leader while in basic training.⁹ The duty of assistant TI marked a pivotal point in Welch's career. After marching his trainees to the base theater for a briefing about the Aviation Cadet program, he received and nonchalantly filled out an application for that program. His score on the entrance exam indicated he had a 95% probability of successfully completing it.¹⁰ Believing "that the gift of intellect carried with it some obligation to do something with it," Welch decided to enter the program.¹¹ In February 1954, Welch excelled in the pre-flight portion designed to train young men how to act as officers. He was assigned to the group staff, which allowed him to shape his assignment, increasing his likelihood of flying fighters.¹²

Welch's performance during pilot training created an unlikely future that sidetracked his desire to become a fighter pilot. The Air Force Training Command instituted a program to upgrade the quality of instructors. Having graduated second in his class, Welch received a deferred fighter assignment to become an initial assignment instructor at basic pilot training.¹³ Over the next several years, he accumulated several thousand flying hours at Williams AFB, Arizona, Laughlin AFB, Texas, and Craig AFB, Alabama. During his time at Williams AFB, Welch

⁸ Undated personal memoirs of Gen Larry D. Welch, provided to the author on 16 October 2011, 299.

⁹ Welch, memoirs, 219.

¹⁰ Welch, interview by Ahmann and Haulman, transcript, 20.

¹¹ Welch, memoirs, 220.

¹² Welch, interview by Ahmann and Haulman, transcript, 24.

¹³ Welch, memoirs, 227.

learned the valuable lesson that leaders should not make promises they cannot keep, which derived from a string of broken promises regarding future assignment possibilities.¹⁴ While at Laughlin AFB, Texas, he discovered a passion for reading and a propensity for writing, which was rewarded with the assignment to rewrite regulations.¹⁵ He also learned that “bright people will not be guided by [unwise] decisions no matter the authority at the origin of the decision,” a realization that derived from mass violations of a poorly developed policy.¹⁶ While at Craig AFB, Welch demonstrated his commitment to extant standards by recommending removal of a student who intentionally struggled with landing the airplane.¹⁷ His commitment to upholding standards earned him a position on the Standardization and Evaluation (Stan/Eval) team, an experience that would serve him well in the future.

While at Craig AFB Welch became committed to a life of education. The Air Force was beginning to look disapprovingly at officers not having college degrees. This led him to begin attending night school. He accumulated 175 credit hours over a period of 17 years, culminating in his receipt of a bachelor’s degree in business from the University of Maryland.¹⁸ His life-long pursuit of education reflected his appreciation for learning.¹⁹

¹⁴ Welch, memoirs, 230. During his assignment, the Air Force decided to change the mission of Williams AFB, leading to several undulations regarding reassignment of the instructor pilots. During this process, the Wing Commander announced each policy in succession with the result that many instructors initially thought they would receive an assignment to fighters only to have the minimum requirements changed at a subsequent meeting. Many instructors were told they would receive a fighter assignment only to have that changed later.

¹⁵ Welch, memoirs, 231.

¹⁶ Welch, memoirs, 231-232. During his assignment to Laughlin AFB, the Group Commander issued a policy directing formal punishment for all pilots whose aircraft had less than 100 gallons of fuel after flight. The instrumentation errors in both the aircraft and fuel trucks, coupled with the syllabus requirement for maximum training on every flight, led to violation of this policy by many instructor pilots. A competition developed among the instructor pilots for who could accumulate the greatest number of punishment letters.

¹⁷ Welch, memoirs, 234.

¹⁸ Welch, memoirs, 282-283.

¹⁹ Welch, interview by Ahmann and Haulman, transcript, 50.

Again standing out from among his peers, Welch was assigned to San Antonio, Texas, to serve on a higher headquarters staff. The Air Force had recently consolidated the subordinate Air Forces into Air Training Command (ATC).²⁰ The Stan/Eval team at Craig AFB became responsible for conducting evaluations at multiple bases, eventually being moved to ATC Headquarters at Randolph AFB, Texas.²¹ While still a first lieutenant, Welch was selected for the ATC Stan/Eval team. Welch had two significant experiences shortly thereafter. First, the Stan/Eval team corrected a flawed approach to pilot evaluation. Previously, evaluations were focused on knowledge alone, but a rise in accidents demonstrated the need to evaluate performance as well.²² Second, Welch received an unexpected phone call directing him to report to the Deputy Chief of Staff (DCS) for Flying Training. Upon reporting to the DCS, Welch was told that first lieutenants on the ATC Stan/Eval team could no longer evaluate ATC instructors, who mostly comprised captains and majors.²³ Consequently, Welch was promoted to captain as part of a trial “below-the-zone” promotion initiative. Such early promotions became a fixture of Welch’s career.

Shortly after his promotion, Welch spent 14 weeks at Squadron Officer School (SOS), an important experience that later influenced his actions as Chief. The SOS curriculum placed highest importance on teamwork, or success of the group.²⁴ Furthermore, each problem or exercise had a school-approved solution, which discouraged innovation and ingenuity.²⁵ Welch fought mightily against the school-approved solutions and was criticized for achieving excellence on his tests when others in his section were struggling.²⁶ He believed strongly that the

²⁰ General Larry D. Welch, e-mail to the author, 24 May 2012.

²¹ Welch, memoirs, 237.

²² Welch, memoirs, 238.

²³ Welch, interview by Ahmann and Haulman, transcript, 50.

²⁴ Welch, memoirs, 240.

²⁵ Welch, memoirs, 240.

²⁶ Welch, memoirs, 240.

success of teams derived from the commitment to personal excellence of each member.²⁷ Welch became an SOS distinguished graduate, but the experience left a sour taste in his mouth. He vowed never to return to Maxwell AFB as a student.²⁸ As Chief, General Welch was later able to direct reforms in the SOS curriculum.

Following SOS, Welch helped restructure pilot training and oversee the development of a new aircraft. The first task was to combine Primary and Basic Pilot Training into one program. He called his proposed solution Undergraduate Pilot Training, which took trainees from their first flight through receipt of their wings.²⁹ Here Welch carefully observed the efficiency with which ATC approached problem solving, without unnecessary interference or bureaucratic resistance.³⁰ His participation in the development of the T-38 exposed him to the holistic experience of aircraft development, syllabus construction, and training implementation. He also studied aerodynamics in order to teach other instructors about the new airplane, a learning experience that would again serve him well.³¹

The moment Welch had dreamed of since entering the Aviation Cadet program finally arrived in October 1962. For the past two-and-one-half years, he had been applying every six months for assignment to a fighter squadron.³² A new wing, the 366th, was being organized in France using National Guard F-84 squadrons that had been deployed to Europe for the Berlin Crisis.³³ Welch received orders to France, where he would fly the fighter that he had originally been assigned to fly after pilot training. Upon arrival, Welch found his flying delayed by his selection to organize a Combat Operations Center (COC) for an upcoming

²⁷ Welch, memoirs, 240.

²⁸ Welch, memoirs, 240.

²⁹ Welch, memoirs, 241.

³⁰ Welch, memoirs, 243.

³¹ Welch, memoirs, 244.

³² Welch, interview by Ahmann and Haulman, transcript, 63.

³³ Welch, interview by Ahmann and Haulman, transcript, 63.

inspection.³⁴ As the only conventional wing in Europe, there was no in-theater model for how to establish a COC, leaving Welch to design the 366th's COC based on his own ideas. After the wing passed the inspection, Welch moved to the 389th Tactical Fighter Squadron and was assigned to fly the F-84.³⁵

Change was a constant theme of Welch's first assignment to fighters. In July 1963, French President Charles deGaulle ordered the removal of foreign combat forces from France. Thus, the 366th relocated to Holloman AFB, NM.³⁶ Shortly after arriving, the 366th failed an inspection by its new headquarters, Tactical Air Command (TAC). Welch was appointed to a team charged with improving the wing's poor strafing performance, which had been the proximate cause of the failure.³⁷ Welch clearly understood the mathematics involved with aiming the F-84's guns, and he diagnosed a harmonization error on the part of the maintenance crews.³⁸ He calculated a solution with which the maintenance experts disagreed but ultimately led to success in the next inspection.³⁹ Once again, Welch had solved a difficult problem. Shortly thereafter, the 366th Wing Commander called the squadron to inform Welch that he had been selected for early promotion to major.⁴⁰ The next year Welch encountered someone from personnel who recognized his name. The personnel officer informed him that he was the only officer without a college degree not removed from the "below-the-zone" promotion list by General Curtis LeMay.⁴¹ The reason he had not been removed was his nearly constant attendance in night school.⁴²

³⁴ Welch, interview by Ahmann and Haulman, transcript, 70.

³⁵ Welch, memoirs, 249.

³⁶ Welch, memoirs, 250.

³⁷ Bexfield and Sheldon, "MORS Oral History Project Interview", 10.

³⁸ Welch, memoirs, 251.

³⁹ Welch, memoirs, 252.

⁴⁰ Welch, memoirs, 254.

⁴¹ Welch, interview by Ahmann and Haulman, transcript, 49.

⁴² Welch, interview by Ahmann and Haulman, transcript, 49.

In 1965 Welch's performance again made him stand out from his peers. The 389th Tactical Fighter Squadron was chosen to convert to the F-4, followed by an inspection and deployment to Alaska.⁴³ Near the end of the inspection, the 389th commander died of a heart attack, leaving the squadron in need of new leadership with little time until deployment.⁴⁴ The wing commander chose to make the operations officer the new commander and elevate Welch to operations officer.⁴⁵ Having been a major for only a few months, Welch found himself in a new and challenging leadership position. The deployment to Alaska was cut short with new orders to prepare for deployment to Vietnam.⁴⁶

War, Analysis, and Leadership

Shortly after getting the squadron established and routinely flying combat missions from Phan Rang AB, Vietnam, the wing commander informed the 389th commander that his new operations officer had arrived.⁴⁷ Welch knew that he would not last long as the operations officer because all the others were lieutenant colonels. The 389th had developed into a first-class fighter squadron, with the commander and Welch being described by a journalist as a nearly ideal leadership team.⁴⁸ Welch remained in the squadron briefly after the new operations officer arrived but requested a transfer when his presence began adversely affecting the new leadership team. Welch worked for the wing Director of Operations (DO) following his transfer.

In October 1966, the 389th moved from Phan Rang AB to Da Nang AB. At Phan Rang AB, the flying had been predominantly over South Vietnam in support of ground forces. These were frequently boring flights, punctuated by the occasional opportunity to help ground units. At Da Nang AB, the 389th became part of the 35th Wing, which flew

⁴³ Bexfield and Sheldon, "MORS Oral History Project Interview", 10.

⁴⁴ Welch, memoirs, 257.

⁴⁵ Welch, memoirs, 257.

⁴⁶ Bexfield and Sheldon, "MORS Oral History Project Interview", 11.

⁴⁷ Welch, memoirs, 264.

⁴⁸ Welch, memoirs, 260.

missions over both South and North Vietnam.⁴⁹ Contempt among the crews for the manner in which the US was fighting the war was growing considerably. Welch interpreted much of what was happening as a contest between the Air Force and the Navy over which service could generate the most sorties.⁵⁰ The 389th was sending large numbers of sorties into North Vietnam against what Welch thought were meaningless targets, while losing aircraft and pilots in the process.

In January 1967, two months before the end of his tour, Welch received orders to attend the Armed Forces Staff College (AFSC). During his return journey, he reflected on his service in Vietnam, capturing five lessons. First, fighting a war with daily direction coming from afar was doomed to fail.⁵¹ Second, to be effective, airpower had to be concentrated and directed in support of theater objectives.⁵² Third, some missions, such as air superiority, required specialized aircraft equipped with the best available technology.⁵³ Fourth, trained and confident crews were essential for success in combat.⁵⁴ Fifth, effective leadership required the professional respect of those being led, which in turn required the leader's intimate knowledge of his subordinates.⁵⁵ These five lessons influenced Welch throughout the remainder of his career.

After graduating from the AFSC, Welch was assigned to the Air Force Studies and Analysis office at the Pentagon. This unusual assignment was filled with opportunity. His function was to teach computer programmers about fighter maneuvers so they could design a program to analyze new fighter designs.⁵⁶ The effort failed in the short-run, but not all was lost. Welch taught himself computer programming and, with the help of the programmers, wrote a program that became

⁴⁹ Welch, memoirs, 266-268.

⁵⁰ Welch, memoirs, 269.

⁵¹ Welch, memoirs, 273.

⁵² Welch, memoirs, 273.

⁵³ Welch, memoirs, 273.

⁵⁴ Welch, memoirs, 274.

⁵⁵ Welch, memoirs, 274.

⁵⁶ Bexfield and Sheldon, "MORS Oral History Project Interview", 12.

known as “Tac Avenger.”⁵⁷ This program remains in use over forty years later. Welch described this experience as “the most intensive mental work” that he had ever done.⁵⁸ The Air Force’s new air superiority fighter, the F-15, was the first major result of Welch’s effort. The second was another early promotion, accompanied by appointment as Chief of the Fighter Division, a position normally filled by a colonel.⁵⁹

As Chief of the Fighter Division, Welch faced a significant professional challenge and learned an important lesson about leadership. As the development of the F-15 evolved, Welch and some others in the Pentagon realized that fiscal reality prevented replacing all F-4s with F-15s. They developed a concept known as the high-low mix, in which the F-15 was the high-end design, while a new, cheaper, and smaller aircraft would be the low-end.⁶⁰ While Welch marshaled support for this, then revolutionary, idea he felt compelled to play his cards close to his vest. When he finally presented the idea to the Chief of Staff, General John Ryan, the Chief reacted negatively. As Ryan stood up to leave, the Vice Chief, General John Meyer, convinced him to hear Welch out.⁶¹ After the briefing, Ryan gave Welch a glass of bourbon as a reward for his courageous presentation.⁶²

Welch’s assignment at the Pentagon ended in 1971, shortly after his early promotion to colonel. As he left the Pentagon, he received a diploma from the University of Maryland for completing a bachelor’s program in business.⁶³ He attended the National War College for his next assignment, simultaneously enrolling at George Washington University and completing a master’s degree in international relations.⁶⁴ Attending the National War College impressed Welch with the value of

⁵⁷ Welch, interview by Ahmann and Haulman, transcript, 129.

⁵⁸ Welch, interview by Ahmann and Haulman, transcript, 130.

⁵⁹ Welch, memoirs, 276-278.

⁶⁰ Welch, memoirs, 278.

⁶¹ Bexfield and Sheldon, “MORS Oral History Project Interview”, 14.

⁶² Bexfield and Sheldon, “MORS Oral History Project Interview”, 14.

⁶³ Welch, memoirs, 282.

⁶⁴ Welch, memoirs, 283.

joint education. He graduated with a better understanding of the problems other services faced and an ecumenical approach to working with them.⁶⁵ Upon completion of his studies, Welch was assigned to George AFB, California, as the 35th Wing DO.⁶⁶

The return to flying presented new opportunities and new challenges. The 35th Wing was growing, soon to be the largest TAC fighter wing in the Air Force.⁶⁷ One mission of the 35th involved training crews who were scheduled for deployment to South Vietnam in the F-4. At the time, the Air Force policy was that until every pilot had completed a first tour, only volunteers would return to Vietnam for a second tour.⁶⁸ This Air Force policy created a problem when pilots began intentionally failing the training to avoid going to Vietnam for a first tour. The Air Force responded by enacting a policy that all pilots who failed this training would lose their wings.⁶⁹ Subsequently, Welch assumed the responsibility of providing recommendations counter to the Air Force policy when pilots failed but in his judgment deserved to keep their wings. This experience impressed upon Welch the futility of overly simplistic policies. During his assignment at George AFB, Welch advanced from DO to Vice Wing Commander.⁷⁰

In September 1974, Welch was reassigned from George AFB to TAC Headquarters at Langley AFB, Virginia. He spent roughly one year working directly for General Robert Dixon, the TAC Commander, developing new constructs referred to as integrated concepts of operations.⁷¹ Integrated concepts of operations guided aircraft development and training by combining discrete capabilities into holistic

⁶⁵ Welch, interview by Ahmann and Haulman, transcript, 177.

⁶⁶ Welch, memoirs, 284.

⁶⁷ Welch, memoirs, 284.

⁶⁸ Welch, memoirs, 285.

⁶⁹ Welch, memoirs, 285.

⁷⁰ Welch, memoirs, 288.

⁷¹ Welch, memoirs, 290.

concepts that would identify capability shortfalls.⁷² Simultaneously, Welch was learning valuable lessons about modernizing during periods of budget austerity, which he would utilize later as Chief of Staff.⁷³ Welch also observed the implementation of a solution to the inadequate aircrew training evident during the Vietnam War. General Dixon directed the creation of Red Flag, a realistic training exercise designed to prepare crews for combat through rigorous exercises over the Nevada desert.⁷⁴ Welch absorbed many lessons during his year at TAC Headquarters; but in August 1975, the time came for him to organize the first F-15 wing.

Organizing the 1st Tactical Fighter Wing (TFW) proved challenging, but it also provided further opportunities for Welch to excel. He realized during preparation for a readiness inspection that the wing would not pass using the existing model for maintenance operations. The F-15 was the Air Force's first highly integrated aircraft, requiring a different approach to organizing maintenance specialists.⁷⁵ Welch requested a delay of the readiness inspection and implemented a Production Oriented Maintenance Organization (POMO).⁷⁶ A year later, POMO became the TAC standard.⁷⁷ One component of Welch's success as 1st TFW commander was the extraordinary talent of his group and squadron commanders.⁷⁸ This blessing became a curse under the Air Force's new forced-distribution OES. Under this system, Welch had to rate four of the seven lieutenant colonels who worked for him at the level of three, which corresponded to their being in the bottom 50% of the Air Force. Being forced to evaluate several exceptionally competent officers in the bottom 50% created in him a lasting desire to fix the OES. In the spring of 1977, Welch received a phone call from General Dixon informing him

⁷² Welch, interview by Ahmann and Haulman, transcript, 196.

⁷³ Welch, interview by Ahmann and Haulman, transcript, 207.

⁷⁴ Welch, interview by Ahmann and Haulman, transcript, 190.

⁷⁵ Welch, memoirs, 294.

⁷⁶ Welch, interview by Ahmann and Haulman, transcript, 229.

⁷⁷ Welch, interview by Ahmann and Haulman, transcript, 230.

⁷⁸ Welch, interview by Ahmann and Haulman, transcript, 209.

of his promotion to brigadier general and starting a new chapter in his Air Force career.

General Officer Perspective

Welch's first duty as a general officer was a brief assignment as the TAC Inspector General. Dixon instructed Welch to design a new process for conducting inspections.⁷⁹ Dixon's idea was to reduce the duration of inspections by dividing them into different phases, thereby increasing the frequency at which units would be visited.⁸⁰ Welch developed the new inspection process in six months and was then transferred to DCS Plans, traditionally a major general's position. As DCS Plans for Dixon, Welch dealt with three challenges. First, he was responsible for the TAC-TRADOC (US Army Training and Doctrine Command) dialog in which the Air Force and Army worked to resolve contentious interservice issues and develop effective joint warfighting doctrine.⁸¹ Second, he began initial planning for the Rapid Deployment Joint Task Force (RDJTF), an organization designed to respond quickly to a crisis in the Middle East.⁸² Third, Welch expanded his earlier integrated-concepts work, developing models to identify gaps in TAC capabilities in order to prioritize research and development.⁸³ These three initiatives exposed Welch to areas that would serve him well in later positions.

Welch's experience at TAC changed dramatically with the arrival of a new commander, General Bill Creech. Welch caught General Creech's attention early, producing a challenging set of initiatives that would outline the path of TAC modernization that Creech intended to take.⁸⁴ A significant change under Creech was the rededication to training and readiness. Under Dixon, readiness had been sacrificed somewhat to pay for modernization initiatives, but Creech believed it was then time to

⁷⁹ Welch, memoirs, 298.

⁸⁰ Welch, interview by Ahmann and Haulman, transcript, 257.

⁸¹ Welch, memoirs, 3

⁸² Welch, memoirs, 3.

⁸³ Welch, memoirs, 3.

⁸⁴ Welch, memoirs, 8.

focus heavily on readiness.⁸⁵ This lesson would stay with Welch and influence his view toward strategic modernization in the 1980s.⁸⁶ Reflecting on the differences between Generals Creech and Dixon, Welch concluded that the system produced the right leader at the right time. Dixon had made tough choices to fund modernization; and Creech recognized that with those initiatives bearing fruit, the time had come to place greater emphasis on readiness.⁸⁷ After proving his value to Creech, Welch was promoted to major general and appointed as the TAC DO.

The end of Welch's assignment at TAC arrived with the opportunity to command 9th Air Force and solve new challenges. The RDJTF initiative Welch oversaw at TAC had been transferred to the 9th Air Force as the Middle East component headquarters.⁸⁸ During the next two years, 9th Air Force, in conjunction with the RDJTF Commander, Marine Lieutenant General P.X. Kelly, created operational plans for countering a Russian invasion of Iran.⁸⁹ Welch later noted that with some modification the plan developed during his time at 9th Air Force evolved to become the plan executed against Iraq in 1991.⁹⁰ His performance as 9th Air Force Commander led to assignment to the Pentagon, becoming the Deputy Chief of Staff for Programs and Resources (DCS/PR).

For the next two years, Welch served as the DCS/PR and, after receiving his fourth star, Vice Chief of Staff of the Air Force. During those two years, Welch spent many hours dealing with the budget, strategic modernization programs, and the myriad issues that he would later face as Chief. At the time, Welch thought his Air Force career would come to an end as the TAC Commander because the sitting TAC

⁸⁵ Welch, interview by Ahmann and Haulman, transcript, 212, 261. Readiness was only somewhat sacrificed under Dixon because he believed in and initiated realistic training, like Red Flag. However, during Dixon's tenure as TAC Commander, sacrifices were made in spare parts and available home station training to fund modernization.

⁸⁶ Welch, interview by the author, 22 February 2012.

⁸⁷ Welch, memoirs, 10.

⁸⁸ Welch, memoirs, 16.

⁸⁹ Bexfield and Sheldon, "MORS Oral History Project Interview", 18.

⁹⁰ Bexfield and Sheldon, "MORS Oral History Project Interview", 18.

Commander, General Jerry O’Malley, was scheduled to command SAC in 1985 and probably become Chief in 1986.⁹¹ An aircraft accident claimed the lives of O’Malley and his wife, upsetting those plans.

Welch became the solution to General Gabriel’s Chief of Staff succession problem and was selected to assume command of Strategic Air Command (SAC) in 1985. Shortly after the announcement of his assignment, Welch received a visit from General Curtis LeMay, then retired. When LeMay received command of SAC, the Chief told him that he had one year to fix the command.⁹² His solution was to put the fear of God into SAC personnel to transform them into professionals.⁹³ LeMay told Welch that every SAC commander since him had approached the duty as if SAC were a problem command and in need of the same treatment. LeMay maintained that it was time for a SAC Commander who valued the command for its professionalism.⁹⁴ SAC was a proud command filled with professionals who were experts at the mission of strategic-nuclear deterrence. Welch reached the same conclusion on his own, but appreciated the reassurance that LeMay thought similarly.⁹⁵

When Welch arrived at SAC, he spent several weeks assessing the command and deciding on specific areas that required his attention. Similarly to TAC, SAC readiness suffered from its approach to maintenance.⁹⁶ Welch began working diligently to improve SAC’s readiness, utilizing the professionalism and dedication of SAC personnel as his driving force. SAC had focused intensely on the alert force with little attention to everyday readiness, achieving an abysmal 3% readiness rate for aircraft not on alert or in the air.⁹⁷ To remedy this deficiency, Welch believed that SAC needed a commander who would remove

⁹¹ Welch, memoirs, 32.

⁹² Welch, memoirs, 34.

⁹³ Welch, memoirs, 34.

⁹⁴ Bexfield and Sheldon, “MORS Oral History Project Interview”, 21.

⁹⁵ Welch, memoirs, 35.

⁹⁶ Welch, memoirs, 41.

⁹⁷ Welch, e-mail to the author, 24 May 2012.

obstacles, provide resources, and get out of the way.⁹⁸ The transformation in readiness that Creech had brought to TAC over a period of four years was accomplished in just one year at SAC.⁹⁹ In the first four months, Welch's test case, Fairchild AFB, Washington, achieved daily readiness rates of 60 percent, notably exceeding Welch's requirement to be at 55 percent in six months.¹⁰⁰ Welch presented the highly prestigious Daedalian award for maintenance excellence to Fairchild AFB, the first awarded to SAC in 14 years.¹⁰¹ During his tenure as CINCSAC, he gained true appreciation for the seriousness of the nuclear-deterrence mission and formed some definite opinions about strategic arms modernization that he would continue to utilize during his tenure as Chief. Welch concluded his duties at SAC in just one year, returning to the Pentagon for the last time in his Air Force career.

Formative Beliefs

This brief sketch of Welch's career has identified four beliefs that he would carry with him to the position of Chief of Staff. The first was his recognition of the importance of education and learning. Welch's commitment to life-long learning stemmed from his conviction that Air Force officers must prepare themselves in advance for the responsibilities of their future positions.¹⁰² He frequently shared this imperative with those whom he counseled. Welch's belief in education, coupled with his disenchantment with SOS, motivated his undertaking widespread reforms of the Air University.

The second is Welch's belief that formal analysis should be properly designed and that leaders should rely on its results.

⁹⁸ Welch, memoirs, 43.

⁹⁹ Bexfield and Sheldon, "MORS Oral History Project Interview", 21.

¹⁰⁰ Welch, memoirs, 42.

¹⁰¹ Welch, memoirs, 56.

¹⁰² Welch, interview by the author, 22 February 2012.

Throughout his career, he solved problems in new and innovative ways. His time at Air Force Systems and Analysis from 1967 to 1971 taught him the importance of analysis and the significance of analytical support for decision makers. His experiences at TAC and SAC led to a rigorous approach through which he sought to define problems clearly and develop effective solutions.

The third theme is Welch's belief that the two essential missions of the Air Force were effectively supporting the joint fight and maintaining a credible nuclear deterrent force. The Air Force he wanted to build to support these missions derived from lessons he described as having been burned into his soul after Vietnam and assimilated during his experience as CINCSAC.¹⁰³ He believed strongly in the need to build and train forces that exploited the best technology and resources of the nation. As Chief, he would not send the Air Force into combat ill-equipped and ill-trained, nor would he unduly interfere from his position of safety in Washington. He also possessed a clear image of the importance of strategic-nuclear deterrence and his task of building a force capable of holding at risk those things that the Soviet Union most valued.¹⁰⁴ In short, he intended to build the most capable Air Force he could with the means at his disposal.

The last is Welch's belief in performance as being the decisive factor of Air Force officership. Welch arrived back at the Pentagon in July 1986 with changing the promotion system high on his priority list because it had failed to maintain performance as the central element of officer evaluation. He resolved to fix the OES while Chief of Staff. But by virtue of his position, the largest percentage of his time was spent linking military means with political aims.¹⁰⁵ In his capacity as Chief, General

¹⁰³ Welch, interview by Ahmann and Haulman, transcript, 101.

¹⁰⁴ Welch, memoirs, 44.

¹⁰⁵ Here Welch implicitly grasped the essence of strategy as expressed in Everett Carl Dolman, *Pure Strategy: Power and Principle in the Space and Information Age* (New York: Frank Cass, 2005), 14.

Welch maintained responsibility to the president for implementation of strategic-arms modernization programs and ensuring the readiness of the nation's strategic-nuclear deterrence forces.



Chapter 2

Strategic Arms Modernization and Arms Control

Strategic arms modernization and arms control were the most significant issues with which Welch had to deal as Chief of Staff. The importance derived from the existential nature of the great-power standoff between the US and the Soviet Union. During his four years, a fortuitous confluence of circumstances developed to bring meaningful resolution to the nuclear arms race that had existed since the conclusion of World War II. Welch believed that this contest had become “insane,” while others occupying positions of power on both sides felt the same way.¹ He later observed that the Chairman of the Joint Chiefs of Staff (CJCS), Admiral William Crowe Jr., President Ronald Reagan, President George H.W. Bush, Secretary of State George Shultz, Soviet General Secretary Mikhail Gorbachev, and Marshal of the Soviet Union Sergey Akhromeyev were all supportive of arms-control efforts.² The most vocally opposed official to arms control was the Secretary of Defense, Caspar Weinberger, who resigned in October 1987.³

Everett Dolman has described strategy as “the realm where political concerns and military means interact,” which echoes Clausewitz’s dictum that the duty of a military strategist is to link military means with political aims.⁴ Welch carried the responsibility to match the military means of strategic nuclear deterrence with the political aims of both the Reagan and George H. W. Bush

¹ Gen Larry D. Welch, interview by the author, 22 February 2012.

² Welch, interview by the author, 22 February 2012. Welch described Marshal Akhromeyev as the Soviet equivalent of the CJCS in the US.

³ Charles D. Dusch Jr., “Arms Control during the Reagan Administration,” in *Milestones in Strategic Arms Control, 1945-2000: United States Air Force Roles and Outcomes*, ed. James M. Smith and Gwendolyn Hall (Maxwell AFB, AL: Air University Press, September 2002), 143.

⁴ Everett Carl Dolman, *Pure Strategy: Power and Principle in the Space and Information Age* (New York: Frank Cass, 2005), 24-27; Carl Clausewitz, *On War*, trans. and ed. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1984): 89.

Administrations. As Air Force Chief of Staff, he advised both presidents on programs to support the mission of strategic nuclear deterrence, oversaw the development and implementation of those programs, and provided advice regarding US arms-negotiation positions. In these capacities, Welch exercised considerable influence over both strategic arms modernization programs and US treaty negotiations with the Soviet Union.

Welch possessed a clear vision of what strategic arms programs were required to support strategic nuclear deterrence and fulfill his professional responsibility to build a better Air Force. His vision did not completely match those of the Reagan and Bush Administrations, which were crafted to achieve desired outcomes in negotiations with the Soviet Union. Nevertheless, Welch pursued the presidential goals due to his belief in the primacy of civilian control of the military.⁵ This divergence created, however, the potential for conflict between programs Welch believed were important and programs desired by the two presidents. Fortunately, Welch never faced a decision in which he would have to give up a program he wanted in order to support one of the president's.⁶ The ways Welch employed to bring about both strategic modernization and arms control provide a rich portrait of him as a strategist.

Welch's broad, nuanced understanding of deterrence theory was fundamental to his strategic approach. He grasped that deterrence had to be based on achieving a balance between imposing costs and risks on the adversary on one hand, while simultaneously denying him benefits on the other.⁷ In the case of strategic-nuclear weapons, the US could not deny the Soviets the benefit of destroying the US without launching a preemptive disarming strike. But the Soviets had eliminated that possibility through a program of hardening and mobility implemented

⁵ Welch, interview by the author, 22 February 2012.

⁶ Welch, interview by the author, 22 February 2012.

⁷ Welch, interview by the author, 22 February 2012.

throughout the late 1970s and 1980s.⁸ The Soviet modernization created a capability gap with the US ICBM force that made it unable to hold Soviet nuclear forces at risk. The US still possessed a bomber force capable of striking those targets, but bombers were not a first-strike force. Welch believed that deterrence was not a substitute for capability but was underwritten by capability.⁹ Thus, the US urgently required strategic arms modernization to provide the capability needed to deter the Soviet Union from launching a nuclear attack.

One difficulty of creating an effective strategy for nuclear deterrence was the inability to determine with 100% confidence what the Soviet Union valued. The key to deterrence is holding at risk those things valued most by the enemy. Welch agreed with earlier strategists that four discrete sets of targets had to be covered by the nuclear-deterrence strategy: strategic-nuclear forces, other warfighting capabilities, economic and industrial capabilities, and national leaders.¹⁰ In Welch's mind, the US nuclear triad had to be perceived as capable of devastating all four groups of targets to achieve reasonable assurance of effective deterrence. He emphasized the inability to deny the Soviets the benefit of nuclear war.¹¹ Welch grasped firmly the reality that in order to make the Soviets believe the threat, America had to modernize its nuclear forces.

Welch believed strategic nuclear deterrence required ensuring four capabilities within the US nuclear triad. First, the triad had to be capable of an assured, timely response.¹² Second, it had to contain a survivable second-strike capability.¹³ Third, it had to possess stabilizing resilience, meaning that part of the force had to be immune to

⁸ Russell E. Dougherty, "The Value of ICBM Modernization," *International Security* 12, no. 2 (Autumn, 1987): 164.

⁹ Welch, interview by the author, 22 February 2012.

¹⁰ General Larry D. Welch, e-mail to the author, 24 May 2012.

¹¹ Welch, interview by the author, 22 February 2012.

¹² Welch, interview by the author, 22 February 2012.

¹³ Welch, interview by the author, 22 February 2012.

technological breakthrough or operational innovation.¹⁴ Fourth, it had to demonstrate a visible, unmistakable sign of will and intent.¹⁵ The triad as a collective deterrent force met these four requirements in detail. ICBMs provided the assured, timely response and, coupled with a declared policy of launch-on-warning, provided stabilizing resilience. Submarine-Launched Ballistic Missiles (SLBMs) provided the survivable second strike, while the strategic-bomber force provided the visible, unmistakable sign of will and intent. Welch further believed these four attributes did not necessarily have to reside in each component of the triad. On the latter point, his view was at odds with those of Lieutenant General Brent Scowcroft (Retired) and others, who argued that capability to meet the first three requirements had to reside in each leg of the triad.¹⁶

The efforts of many people throughout the 1980s revolved around the desire to make each leg of the triad independently survivable. Deterrence scholars became concerned with identifying links between deterrence theory and strategic arms modernization, which would inform the choices among various programs. John Toomay's article, "Strategic Forces Rationale—A Lost Discipline?", raised various questions about the US nuclear triad. His contention was that each leg required some capability for survival and that the Soviets had challenged the US ICBM force by hardening their own force and by developing more precise, hard-target capabilities in their ICBMs.¹⁷ The growing fear caused by the relentless Soviet modernization of its strategic nuclear forces was a dominant theme of the 1980s. Lawrence Freedman argued, "It appeared as if the world was moving into a 'second cold war.'"¹⁸

¹⁴ Welch, e-mail to the author, 24 May 2012.

¹⁵ Welch, interview by the author, 22 February 2012.

¹⁶ Welch, e-mail to the author, 24 May 2012.

¹⁷ John C. Toomay, "Strategic Forces Rationale—A Lost Discipline?", *International Security* 12, no. 2 (Autumn, 1987), 193-196.

¹⁸ Lawrence Freedman, *The Evolution of Nuclear Strategy*, 3rd ed. (NY: Palgrave Macmillan, 2003): 378.

Welch, on the other hand, was convinced the arms race of the first half of the 1980s was becoming “insane,” a feeling shared by others in the armed forces.¹⁹ Further, Welch believed the strategic arms modernization program was well in excess of the demands of deterrence but understood that the political leadership saw an additional role in persuading the Soviet Union to negotiate meaningful restrictions on strategic nuclear weapons by convincing them of their inability to compete with the US in the economic realm.²⁰ In this context, Welch recognized the value of the existing programs as being two-fold: they could either be negotiated away to the Soviets to satisfy a viable treaty, or they could be negotiated away to Congress to support a program of higher importance.²¹ At the beginning of his tenure as Chief, Welch joined the other members of the Joint Chiefs in diagnosing the environment as being ripe for successful arms negotiations with the Soviets, a conclusion confirmed by Lawrence Freedman.²²

Events Leading up to Reykjavik

As Welch took up his duties as Chief of Staff, Air Force testimony in support of the FY87 budget was complete, leaving him to implement the programs approved by Congress. The major strategic arms modernization programs included the MX or Peacekeeper ICBM, Small ICBM or Midgetman, the B-1 Bomber, the Advanced Technology Bomber or B-2, and President Reagan’s Strategic Defense Initiative (SDI). These programs sprang from the 1 October 1981 National Security Decision Directive (NSDD) Number 12, which described the Reagan

¹⁹ Louis Mountbatten, “A Military Commander Surveys the Nuclear Arms Race,” *International Security* 4, no. 3 (Winter 1979-1980): 3-5. Welch reached this conclusion during his tenure as CINCSAC, while performing his responsibility to build and execute the Single Integrated Operations Plan (SIOP).

²⁰ Welch, e-mail to the author, 24 May 2012.

²¹ Welch, memoirs, 48.

²² Welch, e-mail to the author, 24 May 2012; Freedman, *The Evolution of Nuclear Strategy*, 380.

Administration's strategic modernization initiative.²³ The modernization program would undergo changes and reprioritization throughout the 1980s, but it began an almost decade-long buildup of US strategic nuclear capabilities.

The budget realities during the second half of the 1980s challenged the Air Force's ability to continue the strategic arms modernization program. The programs initiated in 1981 by NSDD-12 benefited from unprecedented growth in the defense budget. That budget rose dramatically from 1980 through 1983; but in 1985 it reached its apex, brought down by the loss of a Republican majority in the Senate.²⁴ The remainder of the decade was characterized by decreases in Total Obligational Authority for the DOD due to previously approved commitments and failure of the budget to match growth in inflation.²⁵ Welch's budgetary resources shrank throughout most of his tenure. The Air Force budget authority declined roughly five percent each year except for a modest increase of two percent in 1989 (See Figure 1 for a graphical depiction of Air Force budget figures for the period 1981 through 1990).²⁶ Harry Yarger asserts, "The point where constraints on concepts or resources risk achievement of the objectives, the strategy is in question."²⁷ It was Welch's responsibility to lead the work to keep the strategy of the US viable through creative ways to continue the strategic arms modernization program during this period of budget austerity.

²³ Christopher Simpson, *National Security Directives of the REAGAN & BUSH Administrations: The Declassified History of U.S. Political & Military Policy, 1981-1991* (San Francisco, CA: Westview Press, 1995): 46.

²⁴ Kevin N. Lewis, *What if the Reagan Defense Buildup is over?* (Santa Monica, CA: RAND, April 1987), 13.

²⁵ Lewis, *What if the Reagan Defense Buildup is over?*, 4.

²⁶ Office of the Under Secretary of Defense (Comptroller), *National Defense Budget Estimates for FY 2012*, March 2011, http://comptroller.defense.gov/defbudget/fy2012/FY12_Green_Book.pdf (accessed 3 May 2012), 138.

²⁷ Harry, R. Yarger, *Strategy and the National Security Professional: Strategic Thinking and Strategy Formulation in the 21st Century* (Westport, CT: Praeger, 2008), 136.

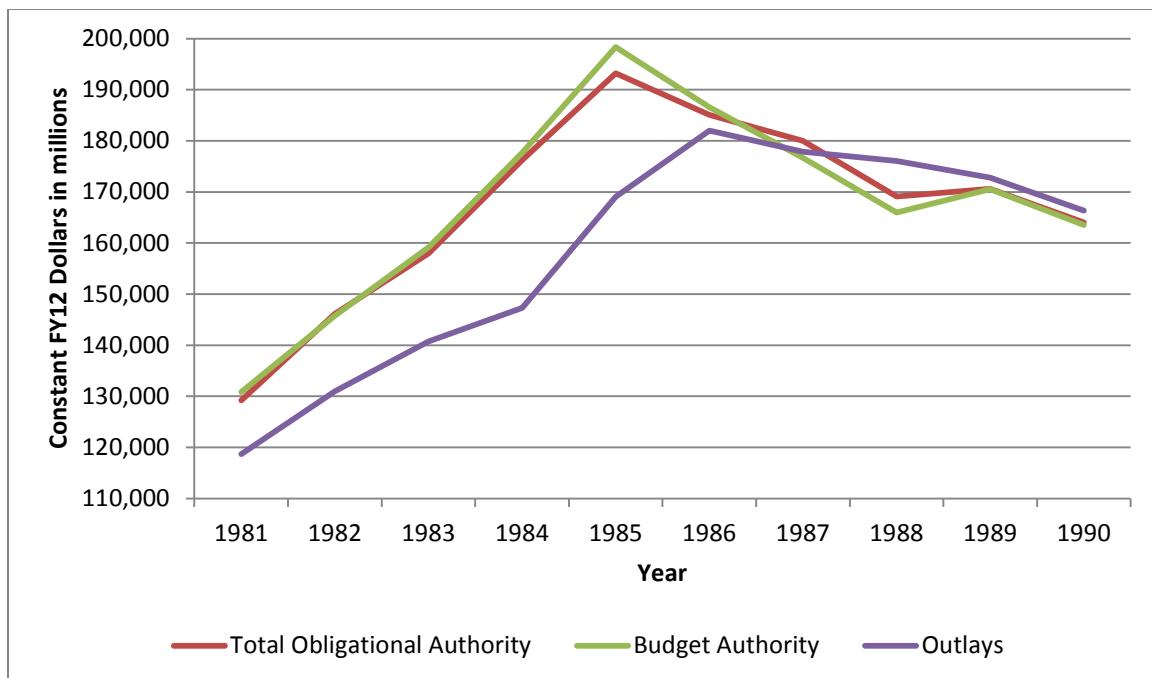


Figure 1: The Air Force Budget, 1981-1990

Source: Author's original work utilizing budget data from *Office of the Under Secretary of Defense (Comptroller), National Defense Budget Estimates for FY 2012, March 2011*, http://comptroller.defense.gov/defbudget/fy2012/FY12_Green_Book.pdf (accessed 3 May 2012).

Welch participated in the strategic arms modernization program in many capacities. In October 1983 he had returned to the Pentagon as the DCS Programs & Requirements, overseeing the strategic modernization initiative for Air Force programs.²⁸ In August 1984 when he became Vice Chief, his attention was largely consumed by the President's strategic modernization programs, which were not popular in Congress.²⁹ In August 1985, he was appointed the commander of SAC, in which he was also the CINCSAC, responsible to the President for strategic nuclear readiness and warfighting.³⁰ Upon returning to the Pentagon as Chief of Staff in July 1986, Welch had spent nearly three

²⁸ Undated personal memoirs of Gen Larry D. Welch, provided to the author on 16 October 2011, 20-23.

²⁹ Welch, memoirs, 28.

³⁰ Welch, memoirs, 35.

years immersed in the strategic arms modernization program. This experience gave him the ability to navigate the highly contentious issues regarding strategic modernization successfully.

Efforts to bring about strategic arms reduction with the Soviet Union were marred by insufficient verification procedures and variability in the US negotiating position. The Strategic Arms Limitation Talks (SALT) produced two successive treaties between the US and the Soviet Union, but they brought no meaningful end to the arms race.³¹ The Reagan Administration developed a clear imperative to reduce the threat of nuclear war.³² Reagan worked to create coherence and predictability in the US negotiating position through a succession of NSDDs that outlined guidance and objectives for arms control.³³ On 19 September 1986, Soviet Foreign Minister Eduard Shevardnadze delivered a note to Secretary of State Shultz from General Secretary Gorbachev suggesting a meeting between Gorbachev and Reagan in Reykjavik, Iceland.³⁴ Welch provided advice through the CJCS for the strategic arms negotiation position that Reagan would take to the summit at Reykjavik. The objectives were “a 50 percent reduction in strategic nuclear warheads, selective emphasis on the most destabilizing nuclear systems (ICBM), equality between the parties, and effective verification.”³⁵

The Reykjavik Summit as a Watershed Event

On 11-12 October 1986, President Reagan and General Secretary Gorbachev met for a summit in Reykjavik, Iceland.³⁶ Gorbachev appeared determined to win the publicity campaign, decrying the US

³¹ Raymond L. Garthoff, “Negotiating with the Russians: Some Lessons from SALT,” *International Security* 1, no. 4 (Spring 1977): 22.

³² Freedman, *The Evolution of Nuclear Strategy*, 380.

³³ Simpson, *National Security Directives of the REAGAN & BUSH Administrations*.

³⁴ Simpson, *National Security Directives of the REAGAN & BUSH Administrations*, 651.

³⁵ Forrest E. Waller, Jr., “National Security Strategy: Arms Control, and the US Air Force: The Reagan Years, 1981-88,” in *Milestones in Strategic Arms Control, 1945-2000: United States Air Force Roles and Outcomes*, ed. James M. Smith and Gwendolyn Hall (Maxwell AFB, AL: Air University Press, September 2002), 174.

³⁶ Dusch, “Arms Control during the Reagan Administration,” 153.

decision to abandon the SALT II treaty and calling for abolition of all nuclear weapons.³⁷ His target was the US SDI program, which he considered to be a great threat because he realized that the Soviets could not compete economically with this expansion of the arms race.³⁸ The Soviets demonstrated a willingness to make major concessions in order to achieve some delay to the US SDI program. Reagan refused to negotiate SDI at all but did agree to a 10-year commitment not to withdraw from the Anti-Ballistic Missile (ABM) Treaty.³⁹ For the assurance that the US would not field a system that would obviate the effectiveness of Soviet ICBMs for the next 10 years, Gorbachev made four concessions. He agreed to a 50 percent reduction in heavy ICBMs, removal of the strategic definition for Intermediate-range Nuclear Forces (INF), removal of the linkage between French and British nuclear weapons with US INF systems, and acceptance of the “zero option” regarding the SS-20 system in Europe.⁴⁰ Richard Perle later argued that “the nature of arms control negotiations between the United States and the Soviet Union” changed dramatically and perhaps permanently at Reykjavik.⁴¹

The breakthrough at Reykjavik regarding both US and Soviet Union INF in Europe was critical. Welch indicated that no one believed that a tactical nuclear exchange could occur without leading to strategic nuclear war.⁴² He also believed that the Soviets agreed with that position based on their actions at Reykjavik.⁴³ Lawrence Freedman described the development regarding INF as being indicative of a shift in Soviet doctrine toward increasing stability rather than looking for ways to win.⁴⁴

³⁷ Dusch, “Arms Control during the Reagan Administration,” 154.

³⁸ Dusch, “Arms Control during the Reagan Administration,” 155.

³⁹ Dusch, “Arms Control during the Reagan Administration,” 156.

⁴⁰ Dusch, “Arms Control during the Reagan Administration,” 156.

⁴¹ Richard Perle, “Reykjavik as a Watershed in U.S.-Soviet Arms Control,” *International Security* 12, no. 1, (Summer 1987): 175.

⁴² Welch, interview by the author, 22 February 2012.

⁴³ Welch, interview by the author, 22 February 2012.

⁴⁴ Freedman, *The Evolution of Nuclear Strategy*, 404.

The breakthrough regarding INF was largely attributed to the American decision to support fielding of Pershing II missiles and Ground-Launched Cruise Missiles in Europe.⁴⁵ Here, the US fielded a force capable of striking the Soviet Union, while the Soviets were fielding a force of SS-20s that could strike only North Atlantic Treaty Organization (NATO) countries in Europe. Freedman argued that it made sense for the Soviet Union to trade missiles capable of hitting only US allies for missiles capable of hitting the Soviet Union.⁴⁶ The path was thus set for concluding a meaningful treaty regarding INF, but Welch had work to do in the interim to keep the strategic modernization program on course.

A significant public debate about both the B-1B and the MX ICBM developed during 1987. Much of the media coverage portrayed the B-1B and the MX in a negative light, challenging the need for those systems.⁴⁷ Congress approved the deployment of only 50 MX missiles, well below the administration's desire to field 100.⁴⁸ The publicity surrounding the B-1B focused on the failure to deliver the Electronic Countermeasures (ECM) suite on time, as well as fuel leaks and crashes.⁴⁹ Welch organized a campaign against the negative publicity aimed at core strategic modernization programs. In a 27 February 1987 policy letter, he emphasized the MX missile's positive influence on triad stability based on its ability to strike multiple targets with one missile.⁵⁰ He defended the B-1B, indicating that the plane was already performing alert

⁴⁵ Senate, *NATO Defense and the INF Treaty: Hearings before the Committee on Armed Services*, 100th Cong., 2nd sess., 3 February 1988, 43.

⁴⁶ Freedman, *The Evolution of Nuclear Strategy*, 399.

⁴⁷ Pat Dalton, "Gen. Larry D. Welch defends Peacekeeper, B-1B programs," *Air Force Times* 48 (21 Sep 1987); John T. Correll, "Future of the ICBM," *Air Force Magazine* 70 (Jul 1987); Jack Ruina, "More is Not Better," *International Security* 12, no. 2 (Autumn, 1987).

⁴⁸ William T. Y'Blood, "Metamorphosis: The Air Force Approaches the Next Century," in *Winged Shield, Winged Sword: A History of the United States Air Force*, vol. 2, ed. Bernard C. Nalty (Washington, DC: Air Force History and Museums Program, 1997), 530.

⁴⁹ Y'Blood, "Metamorphosis: The Air Force Approaches the Next Century," 521.

⁵⁰ Gen Larry D. Welch, "General Officer's Policy Letter," 27 Feb 1987, K168.03-633, IRIS No. 01130515, in the USAF Collection, AFHRA.

missions and would maintain its ability to penetrate Soviet air defenses well into the 1990s.⁵¹ Welch called on all Air Force general officers to be familiar with the B-1B and MX ICBM issues and “take every opportunity to express the Air Force view in support.”⁵² Overcoming the negative publicity aimed at strategic modernization programs was just the beginning of keeping those programs viable.

The FY88 budget further challenged the Air Force’s ability to continue modernizing nuclear arms. That budget brought a six percent reduction to Air Force fiscal resources.⁵³ Despite increased fighter force structure being a priority of the combatant commanders, Welch supported an indefinite freeze on Air Force fighter expansion at 37 wings.⁵⁴ His decision stemmed from the increase in Air Force fighter lethality stemming from the fielding of the F-16 and the F-15E.⁵⁵ Strategic modernization programs remained preeminent in the budget because of the need to demonstrate strong national resolve for negotiations with the Soviet Union.⁵⁶ Welch led other force tradeoffs to continue strategic modernization programs, to include cancelling T-37 replacement aircraft research, slowing C-17 development, and initiating a two-year reduction in service end-strength by 6,000 positions.⁵⁷ The budget tradeoffs reflected Welch’s priorities of putting quality people first, followed by the President’s strategic modernization program, maintaining readiness and sustainability of fielded forces, improving the airlift capacity, and sustaining tactical aircraft modernization and growth.⁵⁸

⁵¹ Welch, “General Officer’s Policy Letter,” 27 Feb 1987.

⁵² Welch, “General Officer’s Policy Letter,” 27 Feb 1987.

⁵³ Office of the Under Secretary of Defense (Comptroller), *National Defense Budget Estimates for FY 2012*, March 2011, 138.

⁵⁴ House, *Department of Defense Appropriations for 1988: Hearings before a Subcommittee of the Committee on Appropriations*, 100th Con., 1st sess., 1987, 591.

⁵⁵ Welch, interview by the author, 22 February 2012.

⁵⁶ House, *Department of Defense Appropriations for 1988*, 1987, 597.

⁵⁷ House, *Department of Defense Appropriations for 1988*, 1987, 591-662.

⁵⁸ House, *Department of Defense Appropriations for 1988*, 1987, 642.

As the possibility for successful treaty negotiations increased, Welch faced a growing questioning of the strategic arms modernization program. Based on the bomber's inherent flexibility, he defended the need for a manned bomber that in addition to the MX ICBM could penetrate Soviet airspace.⁵⁹ He also justified the position of the Joint Chiefs of Staff regarding the potential for a 50 percent reduction in strategic nuclear missiles tentatively agreed to at Reykjavik.⁶⁰ Welch described the Joint Chiefs as supportive of the reductions, provided the strategic-modernization program continued. Welch did not believe that the US would or should field all of the systems in the modernization program, but he also realized that cancelling or reducing programs prior to signing a treaty would not be prudent.⁶¹

As 1987 drew to a close, the Joint Chiefs provided their position regarding INF reductions and their support of an INF Treaty. Gorbachev communicated to Reagan his desire for another summit, this one in Washington from 8-10 December. Two key developments occurred there that enabled the INF Treaty to go forward. First, Gorbachev severed the link between the requirement to postpone the fielding of SDI and a potential US abrogation of the ABM Treaty.⁶² Second, Reagan was nearing the end of his second term as President; and Gorbachev did not want to risk the new administration backing away from the "zero option," leaving Pershing-IIs in Europe.⁶³ Welch described both Crowe and Akhromeyev as being instrumental in convincing their political leaders of the importance of the INF Treaty.⁶⁴ Welch viewed the INF Treaty as being good for the US because it traded roughly 350 US warheads for the elimination of approximately 1,500 Soviet warheads.⁶⁵ Welch also

⁵⁹ "Modernizing Strategic Forces: The Year Ahead," *Airman* 31 (Feb 1987): 14.

⁶⁰ "Modernizing Strategic Forces: The Year Ahead," *Airman* 31 (Feb 1987): 14.

⁶¹ Welch, interview by the author, 22 February 2012.

⁶² Charles D. Dusch Jr., "Arms Control during the Reagan Administration," 159.

⁶³ Charles D. Dusch Jr., "Arms Control during the Reagan Administration," 159.

⁶⁴ Welch, interview by the author, 22 February 2012.

⁶⁵ Welch, interview by the author, 22 February 2012.

viewed the INF Treaty as being good for the Soviets because it eliminated the problem of hundreds of mobile nuclear missiles distributed throughout the Warsaw Pact nations.⁶⁶ The incorporation of intrusive verification procedures was a significant development in INF Treaty negotiations.⁶⁷ For the first time, the Soviet Union and the US agreed to on-site inspection provisions, to include teams that observed the destruction of missiles.⁶⁸ With Joint Chiefs support, the INF Treaty was signed during the Washington Summit, but the battle for Senate ratification loomed ahead.

INF Treaty Ratification and the End of the Reagan Administration

The process of Senate ratification of the INF Treaty moved quickly during the early part of 1988. Welch influenced the environment prior to ratification by working to ensure that Air Force generals supported the treaty. In a 7 December 1987 policy letter, Welch detailed the deep involvement of the Joint Chiefs throughout the entire INF negotiation process, emphasizing that the treaty provided a net gain for the US and contained adequate verification procedures.⁶⁹ Welch testified before both the Senate Armed Services Committee and the Senate Committee on Foreign Relations. During his testimony, Welch strongly supported the treaty, but he also indicated that successful negotiations validated the policy of negotiating from a position of strength.⁷⁰ He further raised a concern that ratification of the INF Treaty would lead Congress to question budget support for continued strategic modernization.⁷¹

A month after testifying in support of the INF Treaty, Welch defended the FY89 Air Force budget to Congress. He began by preparing the Air Force for anticipated cuts, identifying a \$10.5B-budget reduction

⁶⁶ Welch, interview by the author, 22 February 2012.

⁶⁷ Freedman, *The Evolution of Nuclear Strategy*, 400.

⁶⁸ Charles D. Dusch Jr., "Arms Control during the Reagan Administration," 161.

⁶⁹ Gen Larry D. Welch, "General Officer's Policy Letter," 7 Dec 1987, K168.03-636, IRIS No. 01130518, in the USAF Collection, AFHRA.

⁷⁰ Senate, *The INF Treaty: Hearings before the Committee on Foreign Relations*, 100th Cong., 2nd sess., 4 February 1988, 233.

⁷¹ Senate, *The INF Treaty*, 4 February 1988, 238.

in 1989 followed by another \$20B reduction in 1990.⁷² Welch expressed his firm belief that force reductions were prudent and necessary to maintain both modernization initiatives and high readiness levels.⁷³ The Air Force received a modest two percent increase in its share of the DOD budget for FY89 based on a larger share of the cuts in FY88. That increase did not, however, eliminate the need for force-structure reductions.⁷⁴ Welch agreed to reduce the number of tactical fighter wing equivalents from 37 to 36, retiring old aircraft in the process.⁷⁵ He made a voluntary reduction in force size of 27,000 enlisted and 5,600 officers to be completed over two years.⁷⁶ The Air Force also slowed the MX and F-15E procurement schedules for FY89.⁷⁷ Welch convinced the Reagan Administration that the Air Force could not afford the Small ICBM, given the need to maintain conventional force readiness.⁷⁸ Congress, however, allocated additional funds to Small ICBM, enabling limited continuation of development until the new administration made a decision about whether to continue it.⁷⁹

The reduction of funding for the Small ICBM program marked the first deliberate reduction in the strategic arms modernization program. It also signaled looming battles because the decision to prioritize the MX over the Small ICBM intensified the political disagreement over which system better served the nation. Congressman Les Aspin challenged the decision, arguing that cost growth in the MX, coupled with cost reduction

⁷² Welch, “General Officer’s Policy Letter,” 7 Dec 1987.

⁷³ Welch, “General Officer’s Policy Letter,” 7 Dec 1987.

⁷⁴ House, *Department of Defense Appropriations for 1989: Hearings before a Subcommittee of the Committee on Appropriations*, 100th Con., 2nd sess., 8 Mar 1988, 1057.

⁷⁵ House, *Department of Defense Appropriations for 1989*, 8 Mar 1988, 1057.

⁷⁶ “Budget and benefits top leaders’ agenda—service chief faces double challenge of ensuring defense, members morale,” *Air Force Times* 48 (28 Mar 1988): 34.

⁷⁷ House, *Department of Defense Appropriations for 1989*, 8 Mar 1988, 1061.

⁷⁸ “Budget and benefits top leaders’ agenda,” *Air Force Times* 48 (28 Mar 1988): 34.

⁷⁹ House, *Department of Defense Appropriations for 1989*, 8 Mar 1988, 1062.

in the Small ICBM, made them comparable in cost to field.⁸⁰ In a letter of 21 April 1988, Welch responded to Aspin's claims, indicating a cost difference between the systems of \$25B for an equivalent number of warheads.⁸¹ Welch also believed the Air Force decision to be best in the austere budget climate, and he argued that the Small ICBM program should be continued until the next administration could make a final decision on its status.⁸² This battle over the Small ICBM indicated the potential for increased turmoil in the future.

Arms negotiations continued throughout the remainder of the Reagan administration with many positive expectations for a meaningful Strategic Arms Reduction Talks (START) Treaty. The issue of SDI remained non-negotiable for Reagan, who viewed it as the key to eliminating the threat from ICBMs, and ushering in a lasting peace through defense.⁸³ In May 1988, Reagan traveled to the heart of the Soviet Union for a final summit. The Moscow Summit failed to deliver a START Treaty because of irreconcilable differences over SDI and verification issues.⁸⁴ Two modest agreements requiring 24-hour notification for all ICBM and SLBM test launches as well as restricted areas of operation for mobile ICBMs were, however, concluded.⁸⁵ These agreements advanced the negotiations toward achieving a START Treaty during the George H. W. Bush Administration.

Toward a START Treaty

As the George H. W. Bush Administration came to office, the Air Force began to defend its budget request. The FY90 Air Force budget

⁸⁰ Les Aspin, "Fact Sheet: Comparison of Costs—Midgetman, Rail-MX, and Other Strategic Systems," April 1988, K168.03-2071 part 1, IRIS No. 01136751, in the USAF Collection, AFHRA.

⁸¹ "Letter to The Honorable Les Aspin," by Gen Larry D. Welch, 21 April 1988, K168.03-2071 part 1, IRIS No. 01136751, in the USAF Collection, AFHRA.

⁸² "Letter to The Honorable Les Aspin," by Gen Larry D. Welch, 21 April 1988.

⁸³ Charles D. Dusch Jr., "Arms Control during the Reagan Administration," 163-166.

⁸⁴ Charles D. Dusch Jr., "Arms Control during the Reagan Administration," 163.

⁸⁵ Charles D. Dusch Jr., "Arms Control during the Reagan Administration," 164.

represented a four percent reduction from the FY89 approved budget.⁸⁶ Welch faced repeated questioning regarding the status of strategic modernization programs. The Bush Administration decided to continue fielding all of the programs that had been part of the Reagan strategic modernization program, albeit on a time-phased schedule. Welch testified in support of both ICBM modernization and the ATB, or B-2 bomber, four times during the months of June and July 1989. He articulated his belief that both the MX rail-garrison basing mode and Small ICBM were important parts of the modernization program, as well as being fundamental to the negotiating position for the newly resumed START talks.⁸⁷ The administration decided to field MX in its rail-garrison variant, followed by full production of the Small ICBM. Welch supported the concept of the mobile MX because of the flexibility it provided the administration in terms of nuclear readiness.⁸⁸ The Air Force also supported the sequenced development based on the technology-readiness level of each system.⁸⁹ The topic of START negotiations arose repeatedly, clearly indicating a desire in Congress to reduce funding based on the prospect of an arms agreement. Welch defended the programs because they were important to the negotiating position for START.⁹⁰ The price of ICBM modernization, however, led to reduction by half in the planned procurement of the F-15E.⁹¹

The Congressional budget negotiations turned aggressively against the B-2 bomber in the summer of 1989. The B-2's revolutionary design

⁸⁶ Office of the Under Secretary of Defense (Comptroller), *National Defense Budget Estimates for FY 2012*, March 2011, 138.

⁸⁷ Senate, *Department of Defense Authorization for Appropriations for Fiscal Years 1990 and 1991: ICBM Modernization Program Hearing before the Committee on Appropriations*, 101st Cong, 1st sess., 21 Jun 1989, 264.

⁸⁸ Senate, *Department of Defense Authorization for Appropriations for Fiscal Years 1990 and 1991*, 21 Jun 1989, 277.

⁸⁹ Senate, *Department of Defense Authorization for Appropriations for Fiscal Years 1990 and 1991*, 21 Jun 1989, 280.

⁹⁰ Senate, *Department of Defense Authorization for Appropriations for Fiscal Years 1990 and 1991*, 21 Jun 1989, 314.

⁹¹ Senate, *Department of Defense Authorization for Appropriations for Fiscal Years 1990 and 1991*, 21 Jun 1989, 314.

caused the program to evolve for almost a decade in extreme secrecy. The aircraft required invention of over 900 new manufacturing processes estimated to have cost \$15B before production and testing could begin.⁹² The outcome was a level of concurrency in production and testing that alarmed Congress. In a House Armed Services Committee hearing in July 1989, Welch was repeatedly attacked for the delay in releasing program-cost information until it had passed \$20B.⁹³ The rising costs of the program, coupled with the late release of total program costs due to security concerns turned opinion against the B-2, especially within the House of Representatives.⁹⁴ Welch repeatedly defended the B-2 based on the requirement for a penetrating bomber as the most stabilizing component of the triad, as well as one that heavily factored into the US START negotiating position.⁹⁵ The linking of the B-2 program to the negotiating position of START did not meet with the usual supportive response. Paul Stockton described a process known as logrolling, one that service leaders had every confidence would succeed.⁹⁶ Unfortunately, the process failed and the House of Representatives introduced a bill to terminate the B-2 program in 1990.⁹⁷

The START negotiations between the new George H. W. Bush Administration and the Soviet Union continued in 1989. Negotiations

⁹² Frank P. Donnini, *Battling for Bombers: The U.S. Air Force Fights for Its Modern Strategic Aircraft Programs* (Westport, CT: Greenwood Press, 2000): 105.

⁹³ House, *National Defense Authorization Act for FY90: H.R. 2460 and Oversight of Previously Authorized Programs*, 101st Cong., 1st sess., 12 July 1989.

⁹⁴ Donnini, *Battling for Bombers*, 116-117.

⁹⁵ Senate, *Testing and Operational Requirements for the B-2 Bomber: Hearing before the Committee on Armed Services*, 101st Cong., 1st Sess., 21 July 1989, 47.

⁹⁶ Paul N. Stockton, "The New Game on the Hill: The Politics of Arms Control and Strategic Force Modernization," *International Security* 16, no. 2 (Autumn 1991): 159. Stockton spends considerable intellectual effort describing the link between the Joint Chiefs' support for treaties and the programs that the Joint Chiefs desired Congress to fund. In essence, Joint Chiefs testimony in support of a treaty is provided only in exchange for Congress funding weapons programs that the Joint Chiefs desire. In the case of START, Congress began withholding support for Joint Chiefs' programs despite threats from the Joint Chiefs to oppose the START Treaty when it was under consideration for ratification.

⁹⁷ Stockton, "The New Game on the Hill," Autumn 1991, 160.

proceeded slowly with both sides continuing modernization programs while failing to resolve major differences in their negotiating positions.⁹⁸ Welch attributed part of the failure to reach an agreement to stubbornness of civilian negotiators who insisted on provisions that the Joint Chiefs did not believe necessary.⁹⁹ He felt that the civilian negotiators were driven by the desire to “win” the negotiation, rather than working to achieve an advantageous solution for both sides.¹⁰⁰ As Welch’s retirement approached, the final details of the START agreement became settled. The massive turmoil brought about by the Soviet satellite states breaking away from the Soviet Union beginning in 1989 placed immense pressure on the completion of START negotiations.¹⁰¹

Summary Insights

On 31 July 1991, President Bush and General Secretary Gorbachev signed the START Treaty.¹⁰² Shortly after that, Bush announced the removal of all US heavy bombers and 450 Minuteman II ICBMs from alert status, the first of several unilateral arms-control initiatives in the wake of the START Treaty.¹⁰³ Gorbachev followed suit with Soviet unilateral initiatives, leading to Bush’s decision to limit B-2 production to 20 aircraft and cancel the Small ICBM, both of which he announced during his 1992 State of the Union Address.¹⁰⁴ The Cold War had ended, and the decade-long Reagan strategic modernization program was over. The systems acquired were 100 B-1Bs, 50 MX ICBMs, and 20 B-2s. The SDI initiative continued, but with reduced emphasis and limited desire on the part of the US to abrogate the ABM Treaty.

⁹⁸ Thomas S. Mowle, “Arms Control after the Cold War,” in *Milestones in Strategic Arms Control, 1945-2000: United States Air Force Roles and Outcomes*, ed. James M. Smith and Gwendolyn Hall (Maxwell AFB, AL: Air University Press, September 2002), 193.

⁹⁹ Welch, e-mail to the author, 24 May 2012.

¹⁰⁰ Welch, interview by the author, 22 February 2012.

¹⁰¹ Mowle, “Arms Control after the Cold War,” 194.

¹⁰² Mowle, “Arms Control after the Cold War,” 194.

¹⁰³ Mowle, “Arms Control after the Cold War,” 199.

¹⁰⁴ Mowle, “Arms Control after the Cold War,” 199.

Welch later argued that most, but not all, of his objectives for the strategic arms modernization program had been achieved.¹⁰⁵ He got the fielding of the B-1B, the first 50 MX ICBMs in converted Minuteman silos (rather than rail garrison), and maintained both the tactical aircraft modernization programs and Air Force readiness.¹⁰⁶ Welch had wanted to field 50 B-2s; but, in the end, the Air Force got only 20.¹⁰⁷ Several factors contributed to this failure. First, the high price and late release of program costs attracted considerable negative attention in Congress. Second, Welch repeatedly attempted to define the B-2 as being something other than just a strategic-nuclear bomber, but Congressional sentiment tied the B-2 to the Cold War arms race.¹⁰⁸ Third, the success of “logrolling” ended with the dramatic fall of the Soviet Union, leading to cancellation of programs upon which the Joint Chiefs hinged their support for ratification of a START Treaty.

Welch entered the office of Chief of Staff convinced the arms race was out of control and that meaningful negotiations were needed. He described successful arms control as one of his foremost desires during his tenure.¹⁰⁹ Reflecting on the period, he posited that arms control occurred because of a perfect confluence of events.¹¹⁰ People in positions of power in both the US and Soviet Union desired arms control.¹¹¹ Both possessed a cadre of experienced negotiators, familiar with the positions of the opposing side.¹¹² Coupled with an arms race that had become, in Welch’s term, “insane” as well as economically infeasible for both sides,

¹⁰⁵ Welch, interview by the author, 22 February 2012.

¹⁰⁶ Welch, interview by the author, 22 February 2012.

¹⁰⁷ Welch, interview by the author, 22 February 2012.

¹⁰⁸ Donnini, *Battling for Bombers*, 120.

¹⁰⁹ Welch, interview by the author, 22 February 2012.

¹¹⁰ Welch, interview by the author, 22 February 2012.

¹¹¹ Welch, interview by the author, 22 February 2012. Reference the opening page of chapter 2 and the description of those in favor of arms control. Welch believed that the crucial components were the President of the US, the Joint Chiefs of Staff, the Secretary General of the Soviet Union, and the equivalent of our CJCS for the Soviet Union, Marshall Akhromeyev.

¹¹² Welch, interview by the author, 22 February 2012.

the time was ripe for meaningful negotiations.¹¹³ Freedman argues that the Reagan Administration's strategic modernization program may have tipped the scales, but the economic causes for the end of Cold War were much deeper.¹¹⁴

In his four years as Chief of Staff, Welch supported the strategic modernization programs of two presidents, simultaneously maintaining other priority modernization programs and readiness initiatives. He drew a valuable lesson regarding the need for capable strategic thinkers, one that would inform his tenure. Welch achieved the fundamental task of strategy according to Yarger, "understanding the nature of the strategic environment and its various subsystems" to construct a strategy focused on the long-term well-being of the state.¹¹⁵ As part of this broader goal, Welch also had to adjust the Air Force to the provisions of the Goldwater-Nichols Department of Defense Reorganization Act.

¹¹³ Welch, interview by the author, 22 February 2012.

¹¹⁴ Freedman, *The Evolution of Nuclear Strategy*, 407.

¹¹⁵ Yarger, *Strategy and the National Security Professional*, 36-37.

Chapter 3

Implementation of the Goldwater-Nichols Act

President Reagan signed the Goldwater-Nichols Department of Defense Reorganization Act on 1 October 1986. James Locher has clearly described the process through which the legislation evolved in his work *Victory on the Potomac*.¹ That process, which is well documented in the literature, is not the focus of this study. Rather, this study seeks to describe the actions Welch took to implement the legislation. A brief overview of the legislation provides adequate context for understanding the ways in which Welch approached its implementation.

The Goldwater-Nichols Act developed from the belief that service parochialism and excessive bureaucratic inertia dominated the DOD. The National Security Act of 1947 and amendments reorganized the military establishment of the US, creating the DOD and the Joint Chiefs as an advisory council consisting of the each service chief and a rotating chairman.² President Dwight Eisenhower made minor additional changes with Reorganization Plan No. 6 in 1953, followed by statutory changes in the 1958 Amendments to the National Security Act.³ Prior to the Goldwater-Nichols Act, there had been no major statutory changes to the DOD since 1958. During the interim, the belief grew that “bureaucratic interests of the separate services too often prevailed over the requirements of military effectiveness.”⁴ One particular criticism developed that the Joint Chiefs appeared “incapable of providing civilian leaders with cross-service recommendations on defense budget

¹ James R. Locher III, *Victory on the Potomac: The Goldwater-Nichols Act Unifies the Pentagon* (College Station, TX: Texas A&M University Press, 2002).

² Senate Committee on Armed Services, *Department of Defense Reorganization Act of 1986: Report to accompany S. 2295*, 99th Cong., 2nd sess., 14 April 1986, 4.

³ Senate Committee, *Department of Defense Reorganization Act of 1986*, 4.

⁴ William J. Lynn and Barry R. Posen, “The Case for JCS Reform,” *International Security* 10, no. 3 (Winter 1985-1986): 69.

priorities.”⁵ Further, the impending budget crisis of the late 1980s raised concerns about the ability of unified and specified combatant commanders to receive adequate support from the individual services.⁶

As the Chairman of the Joint Chiefs of Staff from 1978 until 1982, General David Jones was a strong advocate for DOD reform.⁷ Jones initially attempted to reform the system from within, but he met significant resistance throughout his tenure as chairman. He envisioned ending the parochialism of the Joint Chiefs system, which was hobbled by its practice of decision by committee.⁸ Jones exhausted multiple options to implement reforms. The new Secretary of Defense for the Reagan Administration, Caspar Weinberger failed to give Jones’s argument for reform any attention because he believed it might detract from the strategic arms modernization program and defense build-up.⁹ In his last budget hearing before Congress on 3 February 1982, Jones broke ranks with Weinberger, calling for legislation to achieve several purposes: strengthen the role of the chairman, separate the joint staff from service oversight, increase the role of the combatant commanders, and enhance the preparations and rewards for joint duty.¹⁰ Jones retired in July 1982 feeling gratified by his call for reforms, which he considered to be the most significant contribution he had made to national security.¹¹

Upon Jones’s retirement, the reform mantle passed to Congress, but Jones’s call for reform would grow over the next four years. Motivated by increasing reports of mismanagement in military acquisitions during the Reagan defense build-up, Congress became increasingly involved in the details of the DOD budget. As part of an

⁵ Lynn and Posen, “The Case for JCS Reform,” 70.

⁶ Lynn and Posen, “The Case for JCS Reform,” 70.

⁷ Locher, *Victory on the Potomac*, 33-58.

⁸ Locher, *Victory on the Potomac*, 49.

⁹ Locher, *Victory on the Potomac*, 49.

¹⁰ Locher, *Victory on the Potomac*, 33-36.

¹¹ Locher, *Victory on the Potomac*, 58.

effort to blunt Congressional initiatives, Reagan appointed David Packard to head a Blue Ribbon Commission on Defense Management.¹² The Packard Commission, as it has become known, primarily examined the budgeting and acquisition process.¹³ It made several recommendations to address the concerns voiced by Jones during his testimony but failed to develop concrete recommendations for authorities within the Joint Chiefs.¹⁴ Reagan approved implementation of the Packard Commission recommendations with the issuance of NSDD-219.¹⁵ Released on 1 April 1986, it was intended to interrupt the more sweeping reforms that Congress was formulating.¹⁶ NSDD-219 did not, however, achieve the desired effect; and progress continued on the legislation.

As proposed legislation was being developed, many prominent members of the armed services testified in hearings of the House Armed Services Committee. From his position as CINCSAC, Welch testified in March 1986. The proposed legislation addressed the relationship that CINCs had with the Joint Chiefs, improving their voice in the budget process and clarifying both their authorities and their place in the national chain of command.¹⁷ Welch supported the increased authority of the CJCS and increased CINC participation in the budget process. But he also cautioned that service chiefs were essential to that process because CINCs approached requirements from a narrow regional or functional perspective.¹⁸ Two proposals for changing the relationship between service staffs and secretariat emerged in the draft legislation. Both stemmed from failure to define adequately the role of the service

¹² Senate Committee, *Department of Defense Reorganization Act of 1986*, 6.

¹³ Christopher Simpson, *National Security Directives of the REAGAN & BUSH Administrations: The Declassified History of U.S. Political & Military Policy, 1981-1991* (San Francisco, CA: Westview Press, 1995): 674-679.

¹⁴ Simpson, *National Security Directives of the REAGAN & BUSH Administrations*, 677.

¹⁵ Simpson, *National Security Directives of the REAGAN & BUSH Administrations*, 639.

¹⁶ Simpson, *National Security Directives of the REAGAN & BUSH Administrations*, 639.

¹⁷ Senate Committee, *Department of Defense Reorganization Act of 1986*, 8.

¹⁸ House, *Reorganization of the Department of Defense: Hearings before the Committee on Armed Services*, 99th Cong., 2nd sess, 1986, 781.

secretariat within the greater DOD.¹⁹ Welch defended the current division of responsibility between the secretariat and service staffs, describing the relationship as complementary and effective.²⁰ He expressed greatest disagreement with the joint personnel aspects of the proposed legislation, arguing, “the definition of what kind of background experience gives you an understanding and a sympathy with joint matters is just too difficult...in a piece of legislation.”²¹ His greatest fear arose from the potential damage to service promotion systems caused by the elevation of joint experience in the evaluation of officer quality and promotion potential.²²

When the Goldwater-Nichols Act became law, it reflected nine Congressional objectives. Highest among these was strengthening civilian authority within DOD.²³ The next three objectives sought to improve military advice, provide CINCs with clear responsibility for mission accomplishment, and ensure appropriate authority was delegated to them.²⁴ The fifth placed increased attention on strategy formulation and contingency planning.²⁵ The last four objectives sought to make more efficient use of resources, improve joint officer management, enhance operational effectiveness, and improve DOD management and administration.²⁶ Congress did not give equal weight to each priority, instead focusing the majority of attention on the operational dimensions of the DOD.²⁷

Welch viewed the ramifications of the Goldwater-Nichols Act with some concern. He interpreted the legislation as having four basic

¹⁹ Senate Committee, *Department of Defense Reorganization Act of 1986*, 9.

²⁰ House, *Reorganization of the Department of Defense*, 782.

²¹ House, *Reorganization of the Department of Defense*, 785.

²² House, *Reorganization of the Department of Defense*, 786.

²³ James R. Locher III, “Has It Worked? The Goldwater-Nichols Reorganization Act,” *Naval War College Review* LIV, No. 4 (Autumn 2001): 105.

²⁴ Locher, “Has It Worked?,” 105.

²⁵ Locher, “Has It Worked?,” 105.

²⁶ Locher, “Has It Worked?,” 106.

²⁷ Locher, *Victory on the Potomac*, 438.

provisions: clarifying the authority of the combatant commanders; designating the chairman of the Joint Chiefs as the spokesman; designating Service Acquisition Executives (SAE) with shorter reporting chains; and creating joint personnel management and joint service credit requirements.²⁸ Speaking for himself and the Army Chief of Staff, General Carl Vuono, Welch expressed strong support for both clarifying the authority of the combatant commanders and designating the chairman as the spokesman for the Joint Chiefs.²⁹ He later indicated that the enhanced combatant commander authority worked with great success during Operation DESERT STORM.³⁰ Welch believed the acquisition directives of Goldwater-Nichols to be a serious mistake and stated that he was uncertain about the long-term ramifications of the joint-personnel management provisions.³¹ The last two provisions occupied the majority of Welch's time and effort in the Air Force's implementation of the Goldwater-Nichols Act.

Acquisition Reform

The Goldwater-Nichols Act incorporated acquisition reform provisions for several reasons. The first derived from the legislation's intent to enhance the authority of and support for the CINCs. This intent stemmed from a belief that service parochialism undercut the needs of the commanders charged with fighting the nation's wars.³² The second derived from the apparent weakness of the chairman in relation to the service chiefs. Congress believed that the CJCS possessed little power over service priorities, resulting in a simple combination of each service's budget into the Joint Staff's recommended budget for DOD.³³ A contributing factor was the lack of coordinated guidance on strategy for the employment of the armed forces. Goldwater-Nichols directed the

²⁸ Welch, interview by the author, 22 February 2012.

²⁹ Welch, interview by the author, 22 February 2012.

³⁰ Welch, interview by the author, 22 February 2012.

³¹ Welch, interview by the author, 22 February 2012.

³² Locher, *Victory on the Potomac*, 441.

³³ Locher, *Victory on the Potomac*, 442.

creation and publication of a National Security Strategy from the President and a National Military Strategy from the Secretary of Defense.³⁴ The elevation of the chairman above the rest of the Joint Chiefs combined with creation of appropriate strategic guidance sought to match limited resources with intended capabilities. General Colin Powell received credit for accomplishing that task as the CJCS when he formulated the new Base Force in 1990, reducing the Cold War structure by 25 percent.³⁵ However, Admiral William Owens, the vice chairman of the Joint Chiefs, indicated that budgeting reverted back to the old process with the creation of the Joint Requirements Oversight Council (JROC) on the joint staff.³⁶ The JROC appeared to “rubber-stamp” service initiatives, marking a return to the “wasteful, bad old days.”³⁷

The third reason acquisition reform was a prominent feature of the Goldwater-Nichols Act evolved from the close relationship between David Packard and Senator Barry Goldwater. The Packard Commission focused its attention on procurement, intending to follow Congressional initiatives focusing on reorganization.³⁸ While the Reagan administration sought to utilize the Packard Commission as a means to sidetrack Congressional initiatives, Goldwater and Senator Sam Nunn viewed the Packard Commission’s recommendations as ammunition for their proposals.³⁹ Goldwater believed that the Packard Commission failed to reach the necessary depth in reorganization because it was conducted over a short period, whereas Congressional initiatives were far more advanced, being based on three years of research.⁴⁰

The Packard Commission’s findings regarding acquisition reform derived largely from suggestions by the commander of Air Force Systems

³⁴ Locher, *Victory on the Potomac*, 441.

³⁵ Locher, *Victory on the Potomac*, 443.

³⁶ Locher, *Victory on the Potomac*, 443.

³⁷ Locher, *Victory on the Potomac*, 443.

³⁸ Locher, *Victory on the Potomac*, 394.

³⁹ Locher, *Victory on the Potomac*, 398.

⁴⁰ Locher, *Victory on the Potomac*, 398.

Command (AFSC), General Lawrence Skantze. The ever-closer Congressional management of acquisition programs, coupled with impending ramifications of the Gramm-Rudman-Hollings Balanced Budget Act, created in Skantze a strong desire to achieve stability for his programs.⁴¹ AFSC endured a \$2.7B budget reduction in 1986 challenging the command's ability to complete the President's strategic modernization program.⁴² Skantze believed that near-term reductions in budgets for science and technology would have an adverse long-term influence.⁴³ He utilized his control over budget authority to spread cuts across programs that could absorb them, preserving funding for programs with long-term influence.⁴⁴ Skantze became a "forceful voice" for DOD acquisition reform both testifying before and informally meeting with the Packard Commission to discuss his views.⁴⁵

Skantze believed that the DOD acquisitions process required streamlining to overcome dysfunctional Congressional management as well as waste within the system. To that end, he argued strongly for the creation of an Under Secretary of Defense for Acquisition, believing that position essential to streamlining defense acquisitions and presenting the image of strong executive management of DOD acquisitions.⁴⁶ The Packard Commission developed a framework to streamline acquisitions that was three layers below the newly established Under Secretary of Defense. They were the SAE, the Program Executive Officer (PEO), and

⁴¹ History, Air Force Systems Command (U), 1 October 1985–30 September 1986, 8. K243.01 V.1, IRIS No. 01083300, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

⁴² History, Air Force Systems Command (U), 1 October 1985–30 September 1986, 9.

⁴³ History, Air Force Systems Command (U), 1 October 1985–30 September 1986, 9.

⁴⁴ History, Air Force Systems Command (U), 1 October 1985–30 September 1986, 10. The capability to reprogram accounts existed within each service in the 1980s, but would disappear with the passage of the Goldwater-Nichols Act and enforcement of strong civilian oversight of service programs. Welch often used reprogramming to achieve necessary cuts, a process which requires much greater oversight or approval for current Chiefs.

⁴⁵ History, Air Force Systems Command (U), 1 October 1985–30 September 1986, 13.

⁴⁶ History, Air Force Systems Command (U), 1 October 1985–30 September 1986, 14.

the Program Manager (PM).⁴⁷ Skantze believed that he would become the PEO for all Air Force programs, with the SAE being at Air Force Headquarters.⁴⁸ The debate regarding the position of PEO was just beginning when the Packard Commission issued its report.

The Goldwater-Nichols Act incorporated the Packard Commission's recommendations completely, but melded them into the legislation's overarching framework designed to strengthen civilian oversight, define the role of the service secretariat, and reduce the size of service staffs.⁴⁹ Goldwater-Nichols mandated the reduction of the service staff and secretariat by 15 percent, with further reductions in subordinate headquarters staffs by 10 or 15 percent.⁵⁰ It also assigned the role of acquisitions to the service secretary, essentially eliminating the system of checks and balances that had previously existed between the service staff and secretariat.⁵¹ Welch warned Congressman Bill Nichols that separating the functions of the service staff and secretariat would have unintended, adverse consequences; but Nichols favored reducing the bureaucracy more than he did preventing adverse consequences.⁵²

The task of implementing the Goldwater-Nichols Act 10 percent reduction in headquarters staff, along with mounting a campaign to defend the existence of AFSC, fell to General Bernard Randolph, who assumed command in July 1987.⁵³ Randolph also began the process of switching to the reduced reporting chain detailed in Goldwater-Nichols. The system was named the Air Force Acquisition Executive System (AFAES), and the battle for control of acquisitions was just beginning as

⁴⁷ History, Air Force Systems Command (U), 1 October 1985–30 September 1986, 16–19.

⁴⁸ History, Air Force Systems Command (U), 1 October 1985–30 September 1986, 16.

⁴⁹ History, Air Force Systems Command (U), 1 October 1985–30 September 1986, 25.

⁵⁰ Locher, *Victory on the Potomac*, 447.

⁵¹ Welch, interview by the author, 22 February 2012.

⁵² Undated personal memoirs of Gen Larry D. Welch, provided to the author on 16 October 2011, 66.

⁵³ History, Air Force Systems Command (U), 1 October 1987–30 September 1988, 3. K243.01 V.1, IRIS No. 01095583, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

FY88 came to an end.⁵⁴ When the George H.W. Bush Administration entered office, it faced a large federal budget deficit, real likelihood that the Cold War would soon end, and growing Congressional attention regarding the perceived slow implementation of Goldwater-Nichols provisions.⁵⁵ Bush launched the Defense Management Review (DMR) to prevent a full Congressional inquiry.⁵⁶ Paul Stevens drafted an initial report on defense acquisition in which he suggested combining AFSC with Air Force Logistics Command (AFLC) without ever visiting either command.⁵⁷ In response, Randolph briefed Welch, the new Secretary of Defense Richard Cheney, and the Joint Chiefs about the advances AFSC had made to streamline acquisitions.⁵⁸ Cheney drafted his report on DMR to Bush in which he did not recommend combining AFSC and AFLC, but he did emphasize the need for sole use of the AFAES in both acquisitions and logistics programs.⁵⁹ AFSC and AFLC became personnel and administrative support commands as a result, signaling the need for much greater reductions in staff. Based on the Stevens report, Welch established a panel to study the savings possible through amalgamation of AFSC and AFLC.⁶⁰

The combination of AFSC and AFLC represented a return to the “cradle-to-grave” approach to weapons-system management. This approach prevailed when the Air Force was founded. In 1961, Lt Gen Bernard Schriever had convinced the DOD of the value of unified research, development, and acquisition separated from logistics and sustainment.⁶¹ Welch subscribed to the same philosophy as Schriever, describing acquisitions as being future-oriented and logistics an everyday

⁵⁴ History, Air Force Systems Command (U), 1 October 1987–30 September 1988, 36.

⁵⁵ History, Air Force Systems Command (U), 1 October 1988–30 September 1989, xxii.

⁵⁶ History, Air Force Systems Command (U), 1 October 1988–30 September 1989, xxii.

⁵⁷ History, Air Force Systems Command (U), 1 October 1988–30 September 1989, 7.

⁵⁸ History, Air Force Systems Command (U), 1 October 1988–30 September 1989, 7.

⁵⁹ History, Air Force Systems Command (U), 1 October 1988–30 September 1989, 8.

⁶⁰ History, Air Force Systems Command (U), 1 October 1988–30 September 1989, 11.

⁶¹ History, Air Force Systems Command (U), 1 October 1988–30 September 1989, 11.

business.⁶² The combination of the two into one organization would, Welch believed, result in degradation of the acquisition process.⁶³ Welch, however, faced considerable fiscal challenges and an administration that sought to satiate growing discontent in Congress. Despite his belief in separate acquisitions and logistics, Welch ordered the merger of AFSC and AFLC, effective 1 September 1989 to achieve personnel reductions required by DMR.⁶⁴ Randolph objected strenuously to the decision; requested an audience with Welch; and, with concurrence from the AFLC commander, accepted a 10 percent reduction in manpower.⁶⁵ Welch reversed his decision to combine the organizations based on declarations from both commanders that they would be able to perform their missions with the ordered manpower reductions.

The debate over the AFAES and designation of PEOs heated up during the DMR process. Under the provisions of the Goldwater-Nichols Act, the secretariat was designated as the SAE. Welch, however, convinced Secretary Donald Rice to accept a modified system in which the Assistant Secretary of the Air Force for Acquisitions would continue to report to both the Chief of Staff and the Secretary of the Air Force.⁶⁶ This agreement preserved some oversight of acquisitions by uniformed personnel, an issue about which Welch felt strongly.⁶⁷ However, when Rice presented his findings to Cheney for the DMR initiative, he offered the possibility that merging AFSC and AFLC in the future might be required, but it was not then desired.⁶⁸

As Welch's tenure as Chief approached the end in 1990, AFSC received a new commander who turned out to be the last. General

⁶² Welch, memoirs, 67.

⁶³ Welch, memoirs, 67.

⁶⁴ History, Air Force Systems Command (U), 1 October 1988–30 September 1989, 19.

⁶⁵ History, Air Force Systems Command (U), 1 October 1988–30 September 1989, 19.

⁶⁶ History, Air Force Systems Command (U), 1 October 1988–30 September 1989, 27.

⁶⁷ Welch, interview by the author, 22 February 2012.

⁶⁸ History, Air Force Systems Command (U), 1 October 1988–30 September 1989, 32.

Ronald Yates took command of AFSC on 20 March 1990.⁶⁹ When he assumed command, AFSC was a shell of its former self, suffering from significant reductions in headquarters personnel and removal from the program management process, with the full implementation of the AFAES. Yates was determined to repair AFSC's image, which suffered from the repeated efforts of Randolph to counter the DMR and AFAES.⁷⁰ Yates believed that he could convince the acquisition establishment created by Goldwater-Nichols that AFSC was an indispensable part of the acquisition process.⁷¹ His efforts, however, faced considerable challenges from the 23 February 1990 creation of the Defense Acquisition Improvement Team, which monitored implementation of the DMR.⁷² On 8 June 1990, Welch relayed Cheney's announcement of a DMR Round II focused on savings through "cross command duplication, inefficiencies, and nonessential structure."⁷³ AFSC's existence would soon be challenged again.

When Welch retired on 30 June 1990, AFSC still existed but was essentially removed from the acquisition chain. Welch retained oversight of service acquisitions through an informal reporting relationship agreed to by Secretary Donald Rice. The future of Air Force acquisitions remained uncertain, as did the long-term effects of joint personnel management.

Joint Personnel Management

Joint personnel management became the most contentious aspect of the Goldwater-Nichols Act. The CJCS, Admiral William Crowe believed that Title IV Joint Officer Personnel Policy was "a serious mistake that

⁶⁹ History, Air Force Systems Command (U), 1 October 1989–30 September 1990, 1. K243.01 V.1, IRIS No. 01101770, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

⁷⁰ History, Air Force Systems Command (U), 1 October 1989–30 September 1990, 2.

⁷¹ History, Air Force Systems Command (U), 1 October 1989–30 September 1990, 3.

⁷² History, Air Force Systems Command (U), 1 October 1989–30 September 1990, 10.

⁷³ History, Air Force Systems Command (U), 1 October 1989–30 September 1990, 14.

threatened a horrendous case of Congressional micromanagement.”⁷⁴ Welch did not have a clear vision regarding the long-term impact of Title IV, but he was concerned that it would encourage careerism.⁷⁵ Locher’s *Victory on the Potomac*, written in 2002, argued that officers had indeed succumbed to careerism by exploiting the provisions of Goldwater-Nichols to their advantage.⁷⁶

The root of service reaction to Title IV stemmed from the intrusiveness of the Goldwater-Nichols Act’s provisions. The legislation established an occupational category known as “joint specialty.”⁷⁷ The requirements for joint specialty were successful completion of joint professional military education, joint assignment in a designated joint-duty position, and selection for the joint specialty by the Secretary of Defense.⁷⁸ Further, joint-specialty officers would fill 50 percent of joint-duty positions with minimum tour lengths of three years for flag officers and three-and-one-half years for other officers.⁷⁹ The legislation restricted service within the military departments from being designated joint duty and directed the Secretary of Defense to ensure that joint-service officers achieved promotion rates equal with those of the service-staff personnel.⁸⁰ Welch oversaw implementation of personnel changes to accommodate the provisions of Title IV, enlisting the assistance of General Robert Dixon for his unique understanding of Air Force personnel systems and management.⁸¹

⁷⁴ Locher, *Victory on the Potomac*, 444.

⁷⁵ Welch, interview by the author, 22 February 2012.

⁷⁶ Locher, *Victory on the Potomac*, 444.

⁷⁷ House Committee of Conference, *Goldwater-Nichols Department of Defense Reorganization Act of 1986: Conference Report To accompany H.R. 3622*, Report 99-824, 99th Cong., 2nd sess., 12 September 1986, 96.

⁷⁸ House Committee, *Goldwater-Nichols Department of Defense Reorganization Act of 1986*, 96.

⁷⁹ House Committee, *Goldwater-Nichols Department of Defense Reorganization Act of 1986*, 96.

⁸⁰ House Committee, *Goldwater-Nichols Department of Defense Reorganization Act of 1986*, 96.

⁸¹ “Letter to General Robert J. Dixon,” by Gen Larry D. Welch, 14 Jan 1987, 168.7225-88, IRIS No. 01149907, in the USAF Collection, AFHRA.

The first task of implementing Title IV provisions required the joint staff to compile a list of Joint Duty Assignments (JDA).⁸² Welch favored conducting a position-by-position review to provide the most accurate information.⁸³ Crowe overruled Welch and decided to establish numerical requirements based on an organization's mission and responsibilities.⁸⁴ Three estimates were developed, low, medium, and high, with Crowe deciding to utilize the medium estimate of 8,000 to 9,000 positions for the JDA list. Two factors influenced the decision to select the medium estimate, public credibility and Professional Military Education (PME)-production capacity.⁸⁵ The subject of joint-PME requirements would become a significant factor in the process of Goldwater-Nichols implementation.

The decision to submit 9,000 positions for the JDA list created a significant joint requirement for the Air Force. It would be responsible for providing 3,349 personnel to fill joint-duty assignments.⁸⁶ The largest component of that total was lieutenant colonels, followed closely by majors, and then decreasing rapidly from colonel through general.⁸⁷ The significance of joint-duty requirements occurred when meeting the requirement for joint PME. The Air Force required 279 intermediate-school positions and 158 senior-school positions each year to meet its JDA requirement.⁸⁸ Unfortunately, it did not receive enough joint-PME positions to meet its requirement, resulting in shortfalls of 169 intermediate-school positions and 92 senior-school positions.⁸⁹ Increasing production at the three existing joint-PME institutions, all part of the National Defense University (NDU), was not a viable option

⁸² History, Air Staff (U), 1 January 1987–31 December 1987, 142. (Top Secret) Information extracted and provided to author is unclassified.

⁸³ History, Air Staff (U), 1 January 1987–31 December 1987, 142.

⁸⁴ History, Air Staff (U), 1 January 1987–31 December 1987, 142.

⁸⁵ History, Air Staff (U), 1 January 1987–31 December 1987, 142.

⁸⁶ History, Air Staff (U), 1 January 1987–31 December 1987, DP-3, 7.

⁸⁷ History, Air Staff (U), 1 January 1987–31 December 1987, DP-3, 7.

⁸⁸ History, Air Staff (U), 1 January 1987–31 December 1987, DP-3, 7.

⁸⁹ History, Air Staff (U), 1 January 1987–31 December 1987, DP-3, 7.

because each service faced joint-PME shortfalls.⁹⁰ Welch decided to recommend that service-PME schools be designated as joint schools with accompanying modifications to syllabi.⁹¹

The impending approval of the JDA list submitted by the Joint Chiefs emphasized the need for resolution concerning joint PME. The JDA list received final approval on 1 September 1987, while the CJCS-sponsored Senior Military Schools Review Board deliberated regarding meeting the joint-PME requirements.⁹² Congressman Nichols caught wind of the Air Force proposal to certify its service-PME institutions as being equivalent to joint PME and wrote a letter to the Secretary of Defense expressing concern that the services would “wave a wand” over their schools to declare them the equivalent to NDU schools.⁹³ Nichols subsequently announced the conduct of hearings to determine the status of service implementation of the legislation.⁹⁴

The Joint Chiefs developed two courses of action to address the shortfall in joint-PME capacity across the services. First, each service would establish a pilot program utilizing a broad set of joint-PME standards, while the National Defense University would continue to use its own standards.⁹⁵ The second course of action required each service to adopt the NDU standards for joint PME and incorporate them into their service schools.⁹⁶ Having been a graduate of joint-PME institutions for both intermediate and senior-service school, Welch preferred the second course of action, believing the NDU standards the best for joint PME.⁹⁷ On 24 November 1987, Crowe approved the development of pilot joint-PME programs at service schools using the NDU standards.⁹⁸

⁹⁰ History, Air Staff (U), 1 January 1987–31 December 1987, DP-3, 7.

⁹¹ History, Air Staff (U), 1 January 1987–31 December 1987, 142.

⁹² History, Air Staff (U), 1 January 1987–31 December 1987, 143.

⁹³ History, Air Staff (U), 1 January 1987–31 December 1987, 143.

⁹⁴ History, Air Staff (U), 1 January 1987–31 December 1987, 143.

⁹⁵ History, Air Staff (U), 1 January 1987–31 December 1987, 144.

⁹⁶ History, Air Staff (U), 1 January 1987–31 December 1987, 144.

⁹⁷ History, Air Staff (U), 1 January 1987–31 December 1987, 144.

⁹⁸ History, Air Staff (U), 1 January 1987–31 December 1987, 144.

However, he authorized each service to develop only a track system, in which selected students within the school would receive credit for joint PME while the remainder did not.⁹⁹

As Congress began its implementation hearings regarding Goldwater-Nichols, Congressman Ike Skelton was designated Chairman for the Panel on Military Education of the House Armed Services Committee. Skelton delivered five speeches on the House floor during the months of October and November 1987. In those speeches, Skelton linked the success of service-PME institutions to producing service leaders capable of responsible stewardship of the nation's armed forces. His speech of 26 October 1987 emphasized the particular requirements for joint education established by the Goldwater-Nichols Act.¹⁰⁰ The charter for Skelton's panel was to review DOD implementation plans for Goldwater-Nichols joint-education requirements and to address the ability of PME institutions to develop "exceptional" military thinkers, planners, and strategists.¹⁰¹ Over the course of the next year-and-one-half, Skelton held hearings both in Washington and at various PME locations. The findings of his panel were published in a committee report of 21 April 1989.

While Skelton conducted his investigation of PME, the Joint Chiefs presented requests for altering Title IV requirements. Welch communicated to Air Force general officers his intent to request changes to minimum tour lengths and incorporate some Air Force positions on the JDA list based on the nature of the various positions, but he

⁹⁹ History, Air University, 1 January–31 December 1988, 49. K239.01 V.1, IRIS No. 01115078, in the USAF Collection, AFHRA.

¹⁰⁰ House, Congressman Skelton of Missouri speaking on the House floor, "Strategy and Military Education: Concerns, Trends, and Unanswered Questions," 100th Cong., 1st sess., *Congressional Record*, vol. 133, no. 168, 26 October 1987, 8967.

¹⁰¹ House, Congressman Skelton of Missouri speaking on the House floor, "The House Armed Services Committee Panel on Military Education: Focusing the Spotlight," 100th Cong., 1st sess., *Congressional Record*, vol. 133, no. 186, 19 November 1987, 10648. For this chapter, details of the panel's findings will only be discussed as they relate to joint PME requirements. Coverage of the panel and its assessment of PME quality will be integrated in the next chapter.

cautioned that changes might not happen until 1989.¹⁰² He also prepared the Congress for requests during his FY88 budget testimony.¹⁰³ On 1 May 1987, the Joint Chiefs received their opportunity to request changes formally during hearings regarding Goldwater-Nichols Act implementation. Welch supported the request to shorten joint-tour lengths, provide waiver authority to give credit for joint experience in the absence of joint PME, and establish joint-PME credit for service schools.¹⁰⁴ He also requested a change allowing the Air Force to designate a limited number of service positions as constituting joint duty.¹⁰⁵ Welch believed that positions such as air liaison officers, in which Air Force officers serve with the Army to control airpower in support of ground units, deserved to be considered joint duty.¹⁰⁶ Congress initiated several changes to the Goldwater-Nichols Act via the FY88 DOD Authorization Act on 4 December 1987.¹⁰⁷

When Skelton's panel concluded its work, it offered 13 recommendations for the accomplishment of joint PME to satisfy the Goldwater-Nichols Act. The first five recommendations clarified the quality and substance of joint education, while establishing the role of the CJCS in certifying service institutions as joint PME.¹⁰⁸ The next two recommendations addressed the need for greater faculty representation from other departments, to include officers who were joint-service qualified.¹⁰⁹ The committee provided two similar recommendations regarding increasing other department representation in the student

¹⁰² Gen Larry D. Welch, "General Officer's Policy Letter," 30 Jun 1987, K168.03-634, IRIS No. 01130516, in the USAF Collection, AFHRA, 3.

¹⁰³ House, *Department of Defense Appropriations for 1988: Hearings before a Subcommittee of the Committee on Appropriations*, 100th Con., 1st sess., 1987, 682.

¹⁰⁴ House, *DOD Reorganization Implementation: Hearings before the Investigations Subcommittee of the Committee on Armed Services*, 100th Con., 1st sess., 1 May 1987, 157-159.

¹⁰⁵ House, *DOD Reorganization Implementation*, 158.

¹⁰⁶ Welch, interview by the author 22 February 2012.

¹⁰⁷ History, Air Staff (U), 1 January 1987-31 December 1987, 145.

¹⁰⁸ House, *Report of the Panel on Military Education of the Committee on Armed Services*, 101st Cong., 1st Sess., 21 April 1989, Committee Print: 4, 81.

¹⁰⁹ House, *Report of the Panel on Military Education*, 82.

body and ensuring the representatives were of the quality required to represent their service credibly.¹¹⁰ The final four recommendations underscored the requirement for oversight of joint PME by the CJCS, in addition to maintaining quality NDU institutions to serve as the primary means of educating joint specialists.¹¹¹ With adoption of the recommendations of the Skelton Panel, the CJCS gained the authority to accredit service-PME institutions to conduct joint PME, thereby enabling the creation of a sufficient number of officers with joint education.

Summary Insights

The Air Staff described the process of implementing the Goldwater-Nichols Act as both tedious and time-consuming.¹¹² The Air Force did not attempt to overturn the law, but it did argue for relaxation in the requirements, specifically those related to joint-officer management.¹¹³ Welch personally viewed the development of joint-specialty officers with skepticism.¹¹⁴ During his testimony as CINCSAC regarding the proposed legislation, Welch emphasized that he was a sitting combatant commander who had never had an assignment that met the joint-duty criteria of the Goldwater-Nichols Act.¹¹⁵ In his mind, the process of identifying joint-specialty officers created the danger of reinstituting careerism, something he was working hard to eliminate from the Air Force.¹¹⁶ Former Secretary of Defense Frank Carlucci confirmed Welch's belief about careerism, indicating that Goldwater-Nichols "created a system of incentives where people felt they had to undertake joint duty at some stage in their careers."¹¹⁷ Further, the approach to pilot joint PME

¹¹⁰ House, *Report of the Panel on Military Education*, 82.

¹¹¹ House, *Report of the Panel on Military Education*, 82-83.

¹¹² History, Air Staff (U), 1 January 1987-31 December 1987, 145.

¹¹³ History, Air Staff (U), 1 January 1987-31 December 1987, 145.

¹¹⁴ Welch, interview by the author, 22 February 2012.

¹¹⁵ Senate Committee, *Department of Defense Reorganization Act of 1986*, 785.

¹¹⁶ Welch, interview by the author, 22 February 2012.

¹¹⁷ Oral History Interview of Frank C. Carlucci, III by Col Charles J. Gross, 11 July 1991. Typed transcript, p.5, K239.0512-2094, IRIS No. 01105669, in USAF Collection, AFHRA.

at the service institutions concerned Welch because of the perception of first and second-class officers at the school.¹¹⁸ Overall, Welch described himself as being ambivalent toward the issue of joint PME and distracted by the tediousness of implementing Title IV requirements.¹¹⁹

The acquisition reform provisions of the Goldwater-Nichols Act were even more troublesome to Welch. During the remainder of his tenure, he maintained acquisitions within his chain of command, ensuring oversight of the process. He realized, however, that literal interpretation of the legislation would allow future Chiefs or Service Secretaries to make the decision to remove acquisition personnel from the chain of command.¹²⁰ From his perspective, the Goldwater-Nichols Act did not cause violence within the acquisition system, but it contained the distinct potential to do so.¹²¹

In implementing the Goldwater-Nichols Act, Welch faced the dilemma of having to fulfill his responsibility to civilian authority despite harboring personal reservations about the legislation. He thus worked to implement its requirements, while also requesting relief from those provisions that most onerously affected the Air Force. As Everett Dolman noted about the military strategist, Welch “once having provided advice and counsel...must actively and fully implement the instructions of the higher authority.”¹²² The ways in which Welch sought to limit the potentially adverse influence of the legislation on acquisitions and careerism reflect his strong belief in the value of long-term, focused development of weapons and personnel. Welch also tackled what he perceived to be problems within the Air Force regarding careerism and inadequate education quality at the Air University. Unlike his

¹¹⁸ House, *Professional Military Education: Hearings before Panel on Military Education of the Committee on Armed Services*, 100th Cong., 2nd sess., 7 June 1988, 1132.

¹¹⁹ Welch, interview by the author, 22 February 2012.

¹²⁰ Welch, interview by the author, 22 February 2012.

¹²¹ Welch, interview by the author, 22 February 2012.

¹²² Everett Carl Dolman, *Pure Strategy: Power and Principle in the Space and Information Age* (New York: Frank Cass, 2005), 27.

implementation of Goldwater-Nichols, in these areas he could exercise a relatively free hand.



Chapter 4

Officer Evaluation and Educational Reform

In an article he wrote for the April 1987 edition of *Sea Power*, Welch stated that the Air Force's future resided in its people, arguing, "Top-quality people are essential to 'leverage' the investment in modern equipment to accomplish the mission."¹ Welch believed he had a professional obligation to build programs designed to enhance the capabilities of Air Force personnel.² As Chief of Staff, Welch was determined to correct deficiencies within the entire Officer Professional Development (OPD) structure. He described the initiatives he undertook as force shaping, ensuring the Air Force received the maximum potential from its greatest intangible resource, the quality of its personnel.³

Chapter 2 described many formative influences during Welch's career that influenced his decisions for reforms he would undertake as Chief. He was particularly disgusted with careerism, which he took to be the practice of mapping out one's entire career, thereby eliminating choice and undermining focus and performance during one's current assignment.⁴ Welch pointedly never tried to arrange a specific assignment for himself, instead letting the "system" do the job for which it was designed.⁵ But as demonstrated during his career, senior commanders recognized Welch's particular talents and used the "system" to place him in positions where they thought those talents would make a significant contribution to the organization. His belief in the value of education, developed from his own life-long pursuit of learning,

¹ Gen Larry D. Welch, "A Focus 'far into the future'--the Air Force in the 21st century," *Sea Power* 30 (Apr 1987): 30.

² General Larry D. Welch, interview by the author, 22 February 2012.

³ Welch, interview by the author, 22 February 2012.

⁴ Oral History Interview of Gen Larry D. Welch by Hugh N. Ahmann and Dr. Daniel L. Haulman, November 1993, October 1994, May 1997, and May 2000. Typed transcript, p.21, K239.0512-2126, IRIS No. 01157777, in USAF Collection, AFHRA.

⁵ Welch, interview by Ahmann and Haulman, transcript, 51.

significantly influenced his decision to improve the quality of education at the Air University.⁶ Upon his appointment as Chief, Welch prioritized the Officer Evaluation System (OES) as the first part of OPD to receive his personal attention.

Officer Evaluation System

Welch wasted no time in his effort to alter the existing Officer Effectiveness Report (OER). In December 1986, he established an ad hoc study group to assess the feasibility of using the Army's rating and promotion system.⁷ The group reported that use of the Army system was infeasible because it would not solve the inflation problem currently plaguing the Air Force's OER system.⁸ Further, the history of multiple changes in the service's officer evaluation system had created a culture of skepticism about any new system that would likely undermine using the Army's system.⁹ Thus, on 15 April 1987, Welch directed the establishment of three separate groups to study the Air Force evaluation system and provide recommendations for changes.¹⁰

The three groups worked independently to develop alternatives, with one group directed to combine the findings. The first group was established at the Air Command and Staff College (ACSC) at Maxwell AFB, AL, and was composed of selected students.¹¹ The second group was a contracted civilian firm that specialized in the design of evaluation systems for civilian industry.¹² The third group was formed at the Air Force's Military Personnel Center (MPC).¹³ The MPC group comprised a wide range of experience and specialties and was chaired by General

⁶ Welch, interview by the author, 22 February 2012.

⁷ History, Air Force Military Personnel Center, 1 January–31 December 1987, 466. K141.34, IRIS No. 01110422, in the USAF Collection, AFHRA.

⁸ History, Air Force Military Personnel Center, 1 January–31 December 1987, 466.

⁹ History, Air Force Military Personnel Center, 1 January–31 December 1987, 466.

¹⁰ History, Air Force Military Personnel Center, 1 January–31 December 1987, 466.

¹¹ History, Air Force Military Personnel Center, 1 January–31 December 1987, 466.

¹² History, Air Force Military Personnel Center, 1 January–31 December 1987, 466.

¹³ History, Air Force Military Personnel Center, 1 January–31 December 1987, 466.

Robert Dixon, then retired.¹⁴ The MPC group had the additional responsibility of compiling the findings of all three groups and designing implementation of the new system.¹⁵ Welch selected Dixon for this effort because of Dixon's intimate knowledge of Air Force personnel matters.¹⁶

The MPC group discovered the process of developing a new evaluation system to be difficult. It also uncovered problems in the evaluation system that had broader implications for OPD, which would be addressed later.¹⁷ The group spent two weeks receiving briefings on the findings of the ad hoc study group, the history of Air Force evaluation and promotion systems, and the status of the current evaluation system.¹⁸ Following the briefings, it spent two weeks devising an approach to studying the problem and preparing a briefing of the approach for Dixon.¹⁹ The group's effort comprised three stages: data collection, option development, and process linkages.²⁰ Dixon argued that the stages could not be separated, which necessitated that study of the problem incorporate "officer attitudes, assignment and career management practices, lessons learned from previous evaluation programs and their impact on the officer force, and recognition of the real world problems faced by commanders and evaluators."²¹

Following the briefing to Dixon, the MPC group received guidance on a new direction. First, the group had to identify the primary purpose of an evaluation system and then determine the shortcomings of the current system in meeting that purpose.²² When the purpose became clear, alternatives designed to meet that purpose could evolve.²³ The

¹⁴ History, Air Force Military Personnel Center, 1 January–31 December 1987, 466-467.

¹⁵ History, Air Force Military Personnel Center, 1 January–31 December 1987, 466.

¹⁶ General John A. Shaud, interview by the author, 24 April 2012.

¹⁷ History, Air Force Military Personnel Center, 1 January–31 December 1987, 466.

¹⁸ History, Air Force Military Personnel Center, 1 January–31 December 1987, 467.

¹⁹ History, Air Force Military Personnel Center, 1 January–31 December 1987, 467.

²⁰ History, Air Force Military Personnel Center, 1 January–31 December 1987, 467.

²¹ History, Air Force Military Personnel Center, 1 January–31 December 1987, 467.

²² History, Air Force Military Personnel Center, 1 January–31 December 1987, 467.

²³ History, Air Force Military Personnel Center, 1 January–31 December 1987, 467.

final step required evaluation of the alternatives with respect to acceptability based on Air Force officer and senior leadership's perspectives.²⁴ The group identified two major purposes of the evaluation system: selecting the best qualified officers for promotion and providing information about officers for assignment selection, force management decisions, and performance feedback.²⁵ With a detailed understanding of the requirements, it became clear that the Air Force was asking too much of a single-form evaluation system.²⁶ The group determined that feedback had to be separated from formal assessment, and the system had to force evaluators to differentiate among levels of performance.²⁷

As the group began to develop a system to meet the identified needs, it defined four pillars of an evaluation program. The four pillars included: "how to give and record feedback, how to record an assessment of potential, how to record an assessment of performance, and how to 'incentivize' an evaluator to differentiate when assessing performance and potential."²⁸ The group began to formulate parts of the new system by evaluating each pillar independently. It concluded that evaluations required control only to avoid inflation at critical decision points, such as promotion boards.²⁹ Thus, a form used only for promotion with controls designed to eliminate inflation would serve the purpose of evaluating potential for promotion.³⁰ Feedback on performance had to be confidential to be meaningful to the individual as an accurate reflection of performance. This would require another form, which would be kept separately from the officer's personnel record.³¹ Further, regular periodic evaluation required a form that focused on

²⁴ History, Air Force Military Personnel Center, 1 January–31 December 1987, 467.

²⁵ History, Air Force Military Personnel Center, 1 January–31 December 1987, 466.

²⁶ History, Air Force Military Personnel Center, 1 January–31 December 1987, 468.

²⁷ History, Air Force Military Personnel Center, 1 January–31 December 1987, 468.

²⁸ History, Air Force Military Personnel Center, 1 January–31 December 1987, 468.

²⁹ History, Air Force Military Personnel Center, 1 January–31 December 1987, 468.

³⁰ History, Air Force Military Personnel Center, 1 January–31 December 1987, 468-469.

³¹ History, Air Force Military Personnel Center, 1 January–31 December 1987, 468-469.

performance and was immune to inflation.³² Finally, the evaluation system required rules governing the position of the evaluator within the officer's chain of command, thereby preventing inflation of rating official by seeking higher positions for evaluation endorsement.³³

The MPC group created an evaluation system later named the Officer Evaluation System (OES). It consisted of a Promotion Recommendation Form (PRF), Officer Performance Report (OPR), and Performance Feedback Worksheet.³⁴ Surprisingly, the MPC group received similar recommendations from the other two groups.³⁵ The new OES was developing by the fall of 1987, but formal announcement of the system did not occur at the November 1987 CORONA conference, where the Air Force four-star generals quarterly meet.³⁶

While the three groups worked to create alternative solutions, Welch executed a discreet campaign to gain support from the Air Force leadership. In a General Officer's Policy Letter dated 27 February 1987, he detailed the drastically reduced capability of the existing OER system to distinguish poor performance from good performance.³⁷ Welch also stated his belief that discriminators such as education degrees and PME, which should only be used as tiebreakers for promotion, had become prerequisites.³⁸ He reassured the general officers that a new system would not be a return to the disastrous 1-2-3 system and stated his intent to advise them of further progress.³⁹ Welch provided an update on 11 September 1987, describing the progress of OES reform, particularly the new system's requirements.⁴⁰ He noted that the new system would

³² History, Air Force Military Personnel Center, 1 January–31 December 1987, 469.

³³ History, Air Force Military Personnel Center, 1 January–31 December 1987, 468.

³⁴ History, Air Force Military Personnel Center, 1 January–31 December 1987, 469.

³⁵ History, Air Force Military Personnel Center, 1 January–31 December 1987, 469.

³⁶ History, Air Force Military Personnel Center, 1 January–31 December 1987, 469.

³⁷ Gen Larry D. Welch, "General Officer's Policy Letter," 27 Feb 1987, K168.03-633, IRIS No. 01130515, in the USAF Collection, AFHRA.

³⁸ Welch, "General Officer's Policy Letter," 27 Feb 1987.

³⁹ Welch, "General Officer's Policy Letter," 27 Feb 1987.

⁴⁰ Gen Larry D. Welch, "General Officer's Policy Letter," 11 Sep 1987, K168.03-635, IRIS No. 01130517, in the USAF Collection, AFHRA.

not be ready for at least a year. Therefore, he would emphasize to promotion boards the importance of evaluating performance by thoroughly reviewing records.⁴¹ Further, Welch promised a detailed and deliberate education campaign to accompany the new system before implementation, beginning with general officers and extending to the entire officer corps.⁴²

The MPC group refined the new OES throughout the winter of 1987-1988 in preparation for presentation at the February 1988 CORONA conference.⁴³ During the conference, the group briefed the new OES to all Air Force four-star general officers.⁴⁴ Welch approved the system and set the implementation date for 1 August 1988.⁴⁵ One four-star commander was not convinced of the feasibility of the new system, leading Welch to explain the new OES personally to all officers at one base under the four-star's command.⁴⁶ Following his presentation, Welch fielded questions from the audience, during which he accepted several suggestions for minor improvements.⁴⁷ But in the final analysis, the new OES met with overwhelming approval.⁴⁸ The four-star commander in question apologized to Welch for the extra effort required to convince him.⁴⁹

Preparations for the release of the new OES consumed the six months between the CORONA conference and system implementation. Welch publicly announced the new OES in a personal letter to all officers of 16 March 1988.⁵⁰ The MPC group created a "World Briefing" and presented it on multiple occasions between the public announcement

⁴¹ Welch, "General Officer's Policy Letter," 11 Sep 1987.

⁴² Welch, "General Officer's Policy Letter," 11 Sep 1987.

⁴³ History, Air Force Military Personnel Center, 1 January-31 December 1988, 471. K141.34, IRIS No. 01110423, in the USAF Collection, AFHRA.

⁴⁴ History, Air Force Military Personnel Center, 1 January-31 December 1988, 471.

⁴⁵ History, Air Force Military Personnel Center, 1 January-31 December 1988, 471.

⁴⁶ Welch, interview by the author, 22 February 2012.

⁴⁷ Welch, interview by the author, 22 February 2012.

⁴⁸ Welch, interview by the author, 22 February 2012.

⁴⁹ Welch, interview by the author, 22 February 2012.

⁵⁰ History, Air Force Military Personnel Center, 1 January-31 December 1988, 471.

and the end of April.⁵¹ An article describing the new OES appeared in the April edition of *Airman* magazine, together with pictures of the new forms, the implementation plan, and a brief outline of future changes to OPD.⁵² The *Airman* article coincided with the release of Air Force Pamphlet 36-30, *Officer Evaluation System: Your Guide To The Revised Officer Evaluation System*, in April 1988.⁵³ Welch invested many hours and much attention to developing the new OES, personally reviewing and approving each form.⁵⁴ The implementation succeeded, and feedback regarding the new system was extremely positive.⁵⁵ The detailed and deliberate campaign to promote the new system worked. Welch had effected positive change in a system that had failed to accomplish its main purpose – identifying the most deserving officers for promotion.

Welch approached OPD reform similarly to OES reform, initiating an information campaign to garner support before implementing changes. In a letter of 7 December 1987, Welch requested that general officers clearly communicate two fundamental precepts of OPD.⁵⁶ First, the OPD system must identify the best qualified officers.⁵⁷ Second, the Air Force must have a common understanding between leadership, the promotion system, and the officer corps “on what is most likely to produce best qualified at each point in an officer’s career.”⁵⁸ On 18 March 1988, Welch followed this communication with another general officer policy letter.⁵⁹ This letter identified a misperception among junior

⁵¹ History, Air Force Military Personnel Center, 1 January–31 December 1988, 471.

⁵² Lt Col Anthony L. Batezel, “Performance: It’s What the Revised Officer Evaluation System Is All About,” *Airman* 32 (April 1988): 19-24.

⁵³ Air Force Pamphlet (AFP) 36-30, *Officer Evaluation System: Your Guide To The Revised Officer Evaluation System*, 4 April 1988.

⁵⁴ General Gilmary Michael Hostage III, interview by the author, 2 May 2012.

⁵⁵ History, Air Force Military Personnel Center, 1 January–31 December 1988, 471.

⁵⁶ Gen Larry D. Welch, “General Officer’s Policy Letter,” 7 Dec 1987, K168.03-636, IRIS No. 01130518, in the USAF Collection, AFHRA.

⁵⁷ Welch, “General Officer’s Policy Letter,” 7 Dec 1987.

⁵⁸ Welch, “General Officer’s Policy Letter,” 7 Dec 1987.

⁵⁹ Gen Larry D. Welch, “General Officer’s Policy Letter,” 18 Mar 1988, K168.03-637, IRIS No. 01130519, in the USAF Collection, AFHRA.

officers that staff jobs were preferable to line jobs.⁶⁰ Welch blamed the large number of by-name requests from senior officers as contributing to the misperception and directed a reduction in the number of by-name requests.⁶¹ These letters helped to achieve unity within the Air Force general officer corps and created support of OPD reform.

The changes to OPD appeared in the December 1988 issue of *Airman*, accompanied by an interview with Welch explaining the rationale for change. Welch argued that the existing system encouraged officers to be more concerned “for their long-range careers than for their present jobs.”⁶² His assessment derived from officer-retention-survey results, in which many officers complained of pressure to leave their primary career field early to obtain experiences that enhanced promotion.⁶³ Welch described the new OES as a critical part of OPD reform, one that placed a new emphasis on performance above other activities.⁶⁴ OPD reform embraced three aspects of officer development: assignments, career progression, and military education. Assignments would no longer require senior-rater selection due to a drastic reduction in hand-picked assignments.⁶⁵ Promotions would primarily evaluate performance and activities beyond one’s defined responsibilities would receive less emphasis.⁶⁶ Existing military education windows allowed officers to complete education by correspondence one rank prior to being eligible to attend in residence. Thus, Welch reduced windows of opportunity for

⁶⁰ Welch, “General Officer’s Policy Letter,” 18 Mar 1988.

⁶¹ Welch, “General Officer’s Policy Letter,” 18 Mar 1988.

⁶² “Airman’s interview this month: Air Force Chief of Staff General Welch,” *Airman* 32 (Dec 1988): 8.

⁶³ “Airman’s interview this month: Air Force Chief of Staff General Welch,” 8.

⁶⁴ “Airman’s interview this month: Air Force Chief of Staff General Welch,” 8.

⁶⁵ Lt Col Anthony Lynn Batezel, “Performance: It’s what the revised Officer Evaluation System is all about,” *Airman* 32 (Apr 1988): 25. Hand-picked assignments are those that senior officers fill through by-name requests for officers. Welch communicated to all general officers his desire to reduce by-name requests, and then reduced the number of assignments requiring a by-name request.

⁶⁶ Batezel, “Performance,” 25.

correspondence education to align with residence opportunities, which were then timed based on officer-development objectives.⁶⁷

Welch's reforms derived from his strong belief in performance as the overriding factor in personnel evaluation. General John Shaud described discrimination as critical to the success of the personnel system, but improper discriminators lead to improper discrimination.⁶⁸ Welch believed that improper discriminators had become the norm, necessitating a return to performance as the dominant discriminator.⁶⁹ He also strongly believed in the value of appropriately timed education for personal improvement.⁷⁰ Thus, he would focus significant attention on delivering quality education to Air Force officers.

Officer Professional Military Education

Reforming the Air University at Maxwell AFB, Alabama, represented a critical step in Welch's efforts to enhance the Air Force's contribution to national defense. Ever since attending SOS in 1959, Welch had felt a particular disdain for the Air University. He believed SOS focused more on "baby-sitting young officers" than providing them a quality educational experience.⁷¹ Further, the facilities at Air University were "disgraceful," not designed to foster education.⁷² While Vice Chief, Welch received an invitation from the Chief of Staff to provide recommendations on how to improve the Air University.⁷³ He organized a group to study the issue, led by Major General John Shaud, the Air Force Director of Plans.⁷⁴ Shaud provided a vision of education designed to educate strategists for the future.⁷⁵ Shaud believed Air Command &

⁶⁷ Batezel, "Performance," 25.

⁶⁸ Shaud, interview by the author, 24 April 2012.

⁶⁹ Welch, interview by the author, 22 February 2012.

⁷⁰ Welch, interview by the author, 22 February 2012.

⁷¹ Welch, interview by the author, 22 February 2012.

⁷² Welch, interview by the author, 22 February 2012.

⁷³ Welch, interview by the author, 22 February 2012.

⁷⁴ Welch, interview by the author, 22 February 2012.

⁷⁵ Welch, interview by the author, 22 February 2012. Gen Shaud attended ACSC, received a PhD from Ohio State University in 1971, and taught on the faculty of ACSC following his graduation from Ohio State. He possessed keen inside knowledge on the

Staff College (ACSC) to be the most critical school, and much in need of reform.⁷⁶ His critical requirements for educated officers were the abilities to think and write effectively.⁷⁷ Shaud also believed the Air Force should create a separate course to educate carefully selected officers about strategy, similar to the Army's School of Advanced Military Studies (SAMS). This vision shaped Welch's efforts to continue reform of the Air University during his tenure as Chief.

Welch believed that the Air Force had to professionalize the Air University, making it an excellent educational institution. In return, the Air University would make a significant contribution to force shaping.⁷⁸ Welch felt that the Air War College (AWC), the senior-service school, functioned as it should but that ACSC and SOS failed to provide rigorous and coherent educational experiences for officers.⁷⁹ Welch derived his beliefs about education from his life-long pursuit of learning, as well as the opportunity to work for General Dixon, an officer who greatly valued learning.⁸⁰ Welch began his effort to transform the Air University into a quality institution with major construction efforts. He allocated funds in the budget to build an addition to the library and upgrade all of the buildings, giving the university a "first-class facility."⁸¹ Welch also committed the Air Force to securing highly qualified faculty, both military

status of the Air University and how to make it better. His background and reputation for sound strategic thinking earned Welch's respect, and adoption of his vision for reforming the Air University.

⁷⁶ Shaud, interview by the author, 24 April 2012.

⁷⁷ Shaud, interview by the author, 24 April 2012.

⁷⁸ Welch, interview by the author, 22 February 2012. Gen Shaud believed that Welch's devotion to educational reform at the Air University stemmed from his firm belief in responsibility to the institution. Shaud, interview by the author, 24 April 2012.

⁷⁹ Welch, interview by the author, 22 February 2012. Rigor and coherence as educational concepts were provided to me by Dr. Harold Winton, but clearly define Welch's view of what education should be.

⁸⁰ Welch, interview by the author, 22 February 2012. Welch described his pursuit of life-long learning in great detail, commenting that everything he learned during his career was of value to him. Dixon provided a valuable lesson to Welch about learning because he took joy in learning something new or that something he had long held to be true was not. Welch believed that the philosophy of maintaining a narrow focus is intensely narrowing, and that openness to educational experiences is critical.

⁸¹ Welch, interview by Ahmann and Haulman, transcript, 179.

and civilian.⁸² He also intended to convert the respective curricula into a rational progression of education appropriately timed during an officer's career.⁸³ Welch demonstrated a firm grasp of the need for rigorous and coherent education to enhance the Air University's contribution to national defense.

When Welch returned to the Pentagon as Chief of Staff in July 1986, the education reforms he had instigated as Vice Chief were well underway. The Air University implemented plans to improve faculty acquisition and retention, and curriculum development and evaluation.⁸⁴ Furthermore, the Air University developed tentative plans for both AWC and ACSC to implement curricula with greater emphasis on joint subjects, an effort begun in 1984 as part of the Joint Force Development Process (JFDP).⁸⁵ The JFDP was not an effort to meet the requirements of the Goldwater-Nichols Act, but an independent effort initiated by the Joint Chiefs to improve appropriately timed education across the services.⁸⁶

On 13 January 1987, Lieutenant General Truman Spangrud, the Air University commander, directed a study for shortening the ACSC curriculum from its existing 40 weeks to 24 weeks.⁸⁷ Air University staff studied the history of ACSC and discovered that several times the course had been shortened to as little as 15 weeks during the Korean War.⁸⁸ Welch supported the proposal that evolved for a 24-week ACSC course, which would achieve the joint requirements of Goldwater-Nichols while simultaneously facilitating an increase in attendance from 20% to 30% of eligible officers.⁸⁹ Welch agreed with the proposal because he had

⁸² Welch, interview by Ahmann and Haulman, transcript, 180.

⁸³ Welch, interview by Ahmann and Haulman, transcript, 180.

⁸⁴ History, Air University, 1 January–31 December 1987, 27. K239.01 V.1, IRIS No. 01099620, in the USAF Collection, AFHRA.

⁸⁵ History, Air University, 1 January–31 December 1987, 28-29.

⁸⁶ History, Air University, 1 January–31 December 1987, 28.

⁸⁷ History, Air University, 1 January–31 December 1987, 44.

⁸⁸ History, Air University, 1 January–31 December 1987, 44.

⁸⁹ History, Air University, 1 January–31 December 1987, 47-48.

attended the Armed Forces Staff College (AFSC), which was a six-month course, and he strongly valued his educational experience at AFSC.⁹⁰

Plans for implementing a shortened ACSC began in 1988, but the first Joint Flag Officer Warfighting Course (JFOWC) occurred in 1987.

The JFOWC initiative, begun at Air University on 15 March 1987, derived from a conversation Welch had with General Carl Vuono, the Army Chief of Staff.⁹¹ The objective of JFOWC was to remove one-and-two-star generals from their daily work, typically not involving warfighting, and immerse them in an intense two-week exercise focused on combat.⁹² The course was presented once at Maxwell AFB and once at Carlisle Barracks, Pennsylvania, after which it moved permanently to Maxwell AFB due to the better facilities there.⁹³ The course was a great success. Navy admirals and Marine Corps generals soon began attending.⁹⁴

During his five speeches in October and November 1987, Congressman Ike Skelton challenged the quality of the PME institutions, indicting them for failing to develop strategists.⁹⁵ Here Skelton addressed the issue already motivating educational reform with the Air Force. His second speech specifically challenged the quality of faculty at the war colleges.⁹⁶ Here again, Skelton singled out an issue already being addressed by Welch's efforts to reform the Air University. Skelton's third speech raised a new issue by recommending that PME institutions seek degree-granting authority, rather than sending officers to civilian

⁹⁰ Welch, interview by the author, 22 February 2012.

⁹¹ Welch, interview by the author, 22 February 2012.

⁹² Welch, interview by the author, 22 February 2012.

⁹³ Welch, interview by the author, 22 February 2012.

⁹⁴ History, Air University, 1 January–31 December 1987, 88-89.

⁹⁵ House, Congressman Skelton of Missouri speaking on the House floor, "Military Strategy: Unfocused, Unstudied, Unlearned," 100th Cong., 1st sess., *Congressional Record*, vol. 133, no. 155, 6 October 1987, 8234.

⁹⁶ House, Congressman Skelton of Missouri speaking on the House floor, "Strategy and Military Education: Concerns, Trends, and Unanswered Questions," 100th Cong., 1st sess., *Congressional Record*, vol. 133, no. 168, 26 October 1987, 8967.

institutions to obtain degrees.⁹⁷ Skelton's final two speeches reiterated the importance of strategy for the national defense and detailed the formation of the Panel on Military Education, which he would chair.⁹⁸ Skelton's concern with military education originally derived from the Goldwater-Nichols Act Title IV requirements for joint education, but he expanded his focus to include the military education system's ability to develop "exceptional military thinkers, planners, and strategists."⁹⁹

Skelton held field hearings at each service's PME institutions. Those at the Air University were conducted from 17-18 March 1988. During those hearings, Air University personnel testified before the panel about many different topics. Skelton began the questioning by paraphrasing from Dr. Williamson Murray's article, "Grading the War Colleges."¹⁰⁰ Murray had claimed that AWC had the weakest faculty of all the war colleges due to "lack of top-level Air Force interest and a focus on training versus education."¹⁰¹ The Air University leadership disagreed with the assessment, citing significant enhancements in faculty development that had been made in the last several years.¹⁰² The leadership satisfied the panel after describing its efforts to hire high-quality civilian instructors and the establishment of academic chairs for curriculum oversight.¹⁰³ Spangrud defended the effort to reduce the ACSC to a 24-week course, citing the AFSC as a quality course of the

⁹⁷ House, Congressman Skelton of Missouri speaking on the House floor, "Strategy and Officer Education: The Weak Link," 100th Cong., 1st sess., *Congressional Record*, vol. 133, no. 171, 29 October 1987, 9144.

⁹⁸ House, Congressman Skelton of Missouri speaking on the House floor, "American Strategy: A Worthy Past, An Uncertain Future," 100th Cong., 1st sess., *Congressional Record*, vol. 133, no. 179, 9 November 1987, 9842.

House, Congressman Skelton of Missouri speaking on the House floor, "The House Armed Services Committee Panel on Military Education: Focusing the Spotlight," 100th Cong., 1st sess., *Congressional Record*, vol. 133, no. 186, 19 November 1987, 10648.

⁹⁹ House, "The House Armed Services Committee Panel on Military Education," 10648.

¹⁰⁰ History, Air University, 1 January–31 December 1988, 40. K239.01 V.1, IRIS No. 01115078, in the USAF Collection, AFHRA. Murray's article appeared in a 1986 edition of *National Interest*.

¹⁰¹ History, Air University, 1 January–31 December 1988, 40.

¹⁰² History, Air University, 1 January–31 December 1988, 40.

¹⁰³ History, Air University, 1 January–31 December 1988, 41.

same duration.¹⁰⁴ Following the hearings, the Panel toured the Air Force Wargaming Center, where they observed and were noticeably impressed by the JFOWC.

Welch testified before the Skelton Panel on 7 June 1988.¹⁰⁵ He described his view that PME was “an absolutely vital part of overall officer professional development.”¹⁰⁶ Further, Welch detailed his view of coherence in education, describing the focus of education in conjunction with officer development.¹⁰⁷ Welch defended the study of a 24-week ACSC, citing his AFSC experience as proof of a quality education and noting the added benefit of a 50 percent increase in ACSC attendance opportunities.¹⁰⁸ During this testimony, Welch announced his decision to create a one-year follow-on course after ACSC, which would be similar to the Army’s SAMS course, except that it would develop strategists, rather than operational planners.¹⁰⁹ In discussions about rigor and officer development, Welch defended his belief that PME was vital to officer development.¹¹⁰ He noted, however, that it had to be accompanied by operational experience gained outside of PME.¹¹¹ He emphasized that management of officer development had to be concerned with more than education. He also described the Air Force’s ongoing effort to improve PME since a 1983 study had highlighted faculty deficiencies at the Air University.¹¹² He concluded his testimony by re-emphasizing the importance of coherence between OPD and PME and

¹⁰⁴ History, Air University, 1 January–31 December 1988, 41.

¹⁰⁵ House, *Professional Military Education: Hearings before Panel on Military Education of the Committee on Armed Services*, 100th Con., 2nd sess., 7 June 1988, 1113.

¹⁰⁶ House, *Professional Military Education*, 1113.

¹⁰⁷ House, *Professional Military Education*, 1113.

¹⁰⁸ House, *Professional Military Education*, 1119.

¹⁰⁹ House, *Professional Military Education*, 1131.

¹¹⁰ House, *Professional Military Education*, 1134.

¹¹¹ House, *Professional Military Education*, 1134.

¹¹² House, *Professional Military Education*, 1139.

describing recent Air Force changes to the PME selection process, which he felt would enhance the quality of officers attending PME schools.¹¹³

Skelton announced his recommendations for improving PME at an 18 November 1988 press conference. He began by noting that the current state of PME was adequate, but he argued that more than adequacy should be expected of the premiere armed forces in the world.¹¹⁴ His three findings were to: improve the level of education in strategic thinking, increase emphasis on “jointness,” and upgrade the quality of the schools primarily through recruiting and developing better faculty.¹¹⁵ The Air University continued its reforms throughout 1988, addressing many of the concerns of the Skelton Panel in the process.¹¹⁶

Educational reform continued at the Air University with minimal significant events during 1989. The Air University received a new commander, Lieutenant General Ralph Havens. Work continued on the development of a 24-week ACSC with plans to implement the shorter course in 1990.¹¹⁷ SOS underwent major changes in curriculum and course length as part of the reform effort.¹¹⁸ Skelton released his panel's report on 21 April 1989. The report detailed the Panel's findings and made nine recommendations.¹¹⁹ The report identified the Air University schools, specifically AWC and ACSC, as those with the highest percentage of passive learning within the DOD.¹²⁰ The Panel expressed particular concerns with the quality of faculty and academic rigor at AWC, as well as the lack of desire by the officer corps to attend Air

¹¹³ House, *Professional Military Education*, 1146.

¹¹⁴ History, Air University, 1 January–31 December 1988, 45.

¹¹⁵ History, Air University, 1 January–31 December 1988, 45.

¹¹⁶ History, Air University, 1 January–31 December 1988, 47.

¹¹⁷ History, Air University, 1 January 1989 – 31 December 1990, 45. K239.01 V.1, IRIS No. 01115085, in the USAF Collection, AFHRA.

¹¹⁸ History, Air University, 1 January 1989 – 31 December 1990, 45.

¹¹⁹ House, *Report of the Panel on Military Education of the Committee on Armed Services*, 101st Cong., 1st Sess., 21 April 1989, Committee Print, 4: 2-7. The nine recommendations are listed in chapter 3.

¹²⁰ House, *Report of the Panel on Military Education*, 159.

University schools, noting that many Air Force officers preferred to attend another service's school or a joint school.¹²¹

Toward the end of 1989, Welch faced increasing attention from Skelton regarding the Air Force's PME institutions. In October the Air University commander, Lieutenant General Ralph Havens, died. Welch selected Major General Charles Boyd to replace Havens and nominated him for promotion to Lieutenant General. Welch later described Boyd as being the man who could transform Air University into what he wanted it to be.¹²² Welch felt that Boyd was a man of courage, character, and intellect, who was also articulate and 100% trustworthy.¹²³ Welch told Boyd that he expected Air University "to make the maximum contribution to shaping Air Force officers."¹²⁴ He also gave him authority to select the commanders of each school, as well as every initial instructor for the School of Advanced Airpower Studies (SAAS), the follow-on school for strategists about which Welch had testified to the Skelton Panel.¹²⁵ Boyd recalled his marching orders from Welch very clearly: "I want you to get Ike Skelton off my a__."¹²⁶ He also remembered that Welch authorized him to write big checks and request things other Air University commanders had not.¹²⁷

To meet the Chief's charter, Boyd developed a plan that would achieve Welch's educational goals for the Air University, while simultaneously meeting Skelton's expectations. Boyd aggressively pursued quality officers to command AWC and ACSC.¹²⁸ He also met with Skelton to learn of his concerns personally and assure him that the Air University would correct its deficiencies.¹²⁹ Skelton subsequently

¹²¹ House, *Report of the Panel on Military Education*, 186-188.

¹²² Welch, interview by the author, 22 February 2012.

¹²³ Welch, interview by the author, 22 February 2012.

¹²⁴ Welch, interview by the author, 22 February 2012.

¹²⁵ Welch, interview by the author, 22 February 2012.

¹²⁶ General Charles G. Boyd, interview by the author, 24 February 2012.

¹²⁷ Boyd, interview by the author, 24 February 2012.

¹²⁸ Boyd, interview by the author, 24 February 2012.

¹²⁹ Boyd, interview by the author, 24 February 2012.

proposed legislation mandating a minimum length of 10 months for intermediate and senior-service schools.¹³⁰ Boyd saw the inevitability of this initiative. He also believed ACSC to be the most important PME opportunity for officers because of its timing just after the midpoint of an officer's career.¹³¹ He therefore set aside plans to shorten ACSC.¹³² Throughout the remainder of Welch's tenure, Boyd pursued the education reforms the Chief desired, implementing roughly 85% of the Skelton Panel's recommendations.¹³³ SAAS began its final year of preparation when Welch retired and enrolled its first class in 1991, bringing to fruition the vision of creating strategists for the Air Force that began with Shaud in 1984.

Summary Insights

Welch believed deeply that the quality of Air Force personnel was an important, intangible resource. He considered it his responsibility to the Air Force and to the nation to provide quality force-shaping initiatives. He reformed the OES because careerism had become rampant in the Air Force. The system he created met with overwhelming support, due in part to Welch's detailed, deliberate process for its unveiling. It also met with support because it was designed to provide officers with appropriate feedback, inflation-proof reports, and appropriately timed objective evaluations for promotion. Welch believed the new OES would endure because it had been specifically designed to inhibit careerism.¹³⁴ He described the new system as "game-proof, but not completely fair."¹³⁵ In his view, the new OES restored performance as the overriding factor in officer evaluation.¹³⁶

¹³⁰ History, Air University, 1 January 1989 – 31 December 1990, 48.

¹³¹ Boyd, interview by the author, 24 February 2012.

¹³² Boyd, interview by the author, 24 February 2012.

¹³³ History, Air University, 1 January 1989 – 31 December 1990, 49.

¹³⁴ Welch, interview by the author, 22 February 2012.

¹³⁵ Welch, interview by the author, 22 February 2012.

¹³⁶ Welch, interview by the author, 22 February 2012.

Welch also identified the need for OPD reform, of which OES was just one part. His belief about professional development stemmed from what he believed to be good career advice, which he gave to junior officers frequently. Welch counseled junior officers that the most important assignment they had was their current one; to decide the path to take upon reaching forks in the road, not earlier; and to do everything possible to be best qualified for the next opportunity when it presented itself.¹³⁷ Being qualified for the next opportunity required devotion to education and learning. Welch believed it was his professional obligation to provide opportunities for educational development.¹³⁸ In his evaluation of the Air University, he discovered that Air Force PME was not teaching strategy, and that officers did not like the experience they received.¹³⁹ Welch concluded that Air University was not shaping the force, and had to be reformed to accomplish its purpose.¹⁴⁰

When Welch retired, Boyd was just beginning the reform of the Air University. Boyd indicated that it was Welch's vision for the Air University to be a quality institution that he continued to implement after Welch retired.¹⁴¹ He continued to receive monetary support from the new Chief; and with Skelton's assistance in Congress, received authorization to pay salaries for civilian instructors commensurate with their abilities.¹⁴² Boyd oversaw the final development of SAAS, hiring four of the five civilian faculty members by the end of 1990.¹⁴³ SAAS began its first class in the summer of 1991, graduating the first group of strategists in 1992, finally achieving Shaud's vision which Welch made his own.¹⁴⁴ Most importantly, Skelton noted in 1992, "in the area of

¹³⁷ Welch, interview by the author, 22 February 2012.

¹³⁸ Welch, interview by the author, 22 February 2012.

¹³⁹ Welch, interview by the author, 22 February 2012.

¹⁴⁰ Welch, interview by the author, 22 February 2012.

¹⁴¹ Boyd, interview by the author, 24 February 2012.

¹⁴² Boyd, interview by the author, 24 February 2012.

¹⁴³ History, Air University, 1 January 1989 – 31 December 1990, 70.

¹⁴⁴ History, Air University, 1 January 1991 – 31 December 1992, 80. K239.01 V.1, IRIS No. 01128533, in the USAF Collection, AFHRA.

improvements in Air University, this should be noted for the record, you have come a long way...You have just come to the top like cream.”¹⁴⁵

Boyd believed Skelton’s conclusion reflected two developments: Air University had actually improved its quality, and Skelton had evolved in his thinking regarding the purpose of PME.¹⁴⁶



¹⁴⁵ History, Air University, 1 January 1991 – 31 December 1992, 70.

¹⁴⁶ Boyd, interview by the author, 24 February 2012.

Chapter 5

Conclusions

This study has examined three specific issues Welch faced during his tenure as Chief of Staff. The overarching theme has been Welch's effectiveness in creating ways with which to match means and ends. In two cases, strategic arms modernization and arms control, and implementation of the Goldwater-Nichols Act, higher authority stipulated the ends. In the third, officer development and education, Welch defined the ends he wished to achieve. To determine how well Welch postured the Air Force for the future we shall now examine developments in each area in the 20 years following Welch's retirement. In doing so, it is useful to appreciate Welch's own perspective of his role as Chief of Staff. Welch believed that one of his main duties was to professionalize the Air Force, which he attributed to General Bill Creech.¹ In a September 1987 interview, Welch also opined that effectiveness as the Chief required achieving the proper balance between readiness and modernization, between nuclear and conventional forces, and between personnel and readiness.² These views guided his approach to each issue.

Strategic Arms Modernization and Arms Control

When Welch retired, the most dramatic events leading up to the end of the Cold War were yet to occur. Nevertheless, as early as the winter of 1988, the Joint Chiefs had anticipated that the Cold War would be over relatively soon.³ To approach the uncertain context of the future

¹ General Larry D. Welch, interview by the author, 22 February 2012.

² Andy Lightbody, "Chief of Staff USAF General Larry D. Welch: interview," *International Combat Arms* 5 (Sep 1987): 53.

³ Oral History Interview of Gen Larry D. Welch by Hugh N. Ahmann and Dr. Daniel L. Haulman, November 1993, October 1994, May 1997, and May 2000. Typed transcript, p.341, K239.0512-2126, IRIS No. 01157777, in USAF Collection, AFHRA. General Shaud identified 7 December 1988 as the day he realized the Cold War would soon end. It coincided with General Secretary Gorbachev's speech at the UN. General John A. Shaud, interview by the author, 24 April 2012.

national security environment, the Joint Chiefs developed the concept of a base force, representing a 25 percent reduction from existing force levels, but capable of ensuring US national security interests until the international environment became reasonably stable.⁴ Implementing the 25 percent reduction would fall to Welch's replacement, General Merrill McPeak.

After a failed coup attempt in Russia, President George H. W. Bush, on 27 September 1991, announced a number of unilateral arms reduction initiatives.⁵ Bush believed the Soviet Union to be finished.⁶ Subsequently, he cancelled the MX ICBM rail-garrison program and the Small ICBM mobile-basing program, while taking all heavy bombers and 450 Minuteman II ICBMs off alert status.⁷ The new Russian President, Boris Yeltsin made similar reductions in his nuclear forces and changes to alert status.⁸ Bush then announced another round of reductions in his 1992 State of the Union address, limiting B-2 production to 20 aircraft, cancelling the Small ICBM program, and halting production of warheads for the MX and Trident II missiles.⁹ Thus, by January 1992, the strategic nuclear tension had all but vanished.

The Arms-control initiatives proceeded rapidly. Fast on the heels of START, the US and Russia negotiated START II, under which most of the goals not achieved by the US in START were accomplished.¹⁰ Welch believed that the civilian negotiators, always eager to achieve a win-lose

⁴ Welch, interview by Ahmann and Haulman, transcript, 341.

⁵ Thomas S. Mowle, "Arms Control after the Cold War," in *Milestones in Strategic Arms Control, 1945-2000: United States Air Force Roles and Outcomes*, ed. James M. Smith and Gwendolyn Hall (Maxwell AFB, AL: Air University Press, September 2002), 199.

⁶ William T. Y'Blood, "Metamorphosis: The Air Force Approaches the Next Century," in *Winged Shield, Winged Sword: A History of the United States Air Force*, vol. 2, ed. Bernard C. Nalty (Washington, DC: Air Force History and Museums Program, 1997), 531.

⁷ Mowle, "Arms Control after the Cold War," 199.

⁸ Mowle, "Arms Control after the Cold War," 199.

⁹ Mowle, "Arms Control after the Cold War," 199.

¹⁰ Mowle, "Arms Control after the Cold War," 200.

scenario during negotiations, took advantage of Russia's poor economic state, forcing on them an unbalanced treaty.¹¹ The reality of a win-lose treaty coupled with the return to power of hard-liners of the Communist Party led to "suspicions that the United States had forced a bad agreement on a desperate, or inept, Yeltsin."¹²

The large reductions in budget and force size foreshadowed by Welch led to significant modifications in the Air Force organization by McPeak. In what was clearly the most contentious change, McPeak deactivated SAC, TAC, and Mobility Airlift Command.¹³ In their places, he created the Air Combat Command and the Air Mobility Command.¹⁴ The forces that had composed SAC were divided among Air Combat Command; Air Mobility Command; and Space Command, which later received control of the ICBM force.¹⁵ McPeak thus eliminated the separation between what Welch had seen as being the two fundamental missions of the Air Force, strategic nuclear deterrence and supporting the joint fight. Prior to the change, Welch gave McPeak his opinion regarding the merger of SAC and TAC, saying that he did not see any reason why they could not do it, but it was not something he would have considered.¹⁶ Reflecting on the decision in May 2000, Welch was much less ambiguous, calling it a terrible mistake.¹⁷ SAC had contained virtually the entire Air Force corporate nuclear expertise, which became dissipated when the command was abolished.¹⁸ In 2012, Welch further opined that general indifference to nuclear matters on the part of

¹¹ Welch, interview by the author, 22 February 2012.

¹² Mowle, "Arms Control after the Cold War," 200-201.

¹³ Y'Blood, "Metamorphosis," 549.

¹⁴ Y'Blood, "Metamorphosis," 549.

¹⁵ Y'Blood, "Metamorphosis," 549.

¹⁶ Welch, interview by Ahmann and Haulman, transcript, 370. Welch, interview by the author, 22 February 2012.

¹⁷ Welch, interview by Ahmann and Haulman, transcript, 370.

¹⁸ Welch, interview by Ahmann and Haulman, transcript, 370.

successive administrations and Air Combat Command leaders had contributed to the decline of nuclear expertise in the Air Force.¹⁹

Dismantling SAC clearly damaged both the Air Force and national security in the 20 years after Welch's tenure. High-profile mistakes in nuclear weapons control and handling occurred in 2007. In response, Secretary of Defense Robert Gates relieved the Chief of Staff and Secretary of the Air Force.²⁰ Subsequently, the Air Force established Global Strike Command, which would assume the mission of providing forces for strategic nuclear deterrence to Strategic Command.²¹ This marked a return to the system that had existed when Welch retired, separate major commands, individually supporting what Welch believed to be the two fundamental missions of the Air Force. Welch later opined that during the effort to convince the Air Force "to see itself as a broad set of capabilities that it contributes to the joint fight...it lost the nuclear-deterrence focus with the end of the Cold War."²²

Several attributes enabled Welch's success in the strategic-nuclear deterrence arena. First, his keen sense for analysis and belief in education led him to approach the issue of nuclear deterrence very carefully. Second, his time at SAC educated him about the nuclear-deterrence mission.²³ Third, his constant drive to be prepared and his detailed knowledge of deterrence capabilities and principles gained him significant credibility on the subject. He commanded so much respect that during a Congressional hearing the Chief of Naval Operations deferred a question regarding nuclear, ballistic-missile submarines to him.²⁴ In short, Welch effectively postured the Air Force for the future regarding its mission of strategic nuclear deterrence. No stronger

¹⁹ General Larry D. Welch, e-mail to the author, 2 May 2012.

²⁰ Department of Defense, *DoD News Briefing with Secretary Gates from the Pentagon*, 5 June 2008, <http://www.defense.gov/transcripts/transcript.aspx?transcriptid=4236>.

²¹ Factsheet, *Air Force Global Strike Command*, 23 April 2010, <http://www.af.mil/information/factsheets/factsheet.asp?id=16613>.

²² Welch, interview by the author, 22 February 2012.

²³ General John A. Shaud, interview by the author, 24 April 2012.

²⁴ General Gilmary Michael Hostage III, interview by the author, 2 May 2012.

evidence exists than the realignment of the Air Force to the same basic system that existed when Welch retired, after the pernicious effects of his successor's shortsightedness became embarrassingly evident.

Implementation of the Goldwater-Nichols Act

The Goldwater-Nichols Act addressed significant issues within the DOD. It was considered a watershed event in the creation of joint war-fighting capability, but not all provisions of the legislation were beneficial. Welch identified two aspects, acquisitions reform and joint personnel management, that were particularly troublesome. Welch believed that Goldwater-Nichols did not itself "cause violence" to the acquisition system, but it enabled poor decisions to be made.²⁵ Welch attempted to implement the legislation responsibly while simultaneously seeking to mitigate the negative effects, another critical task of the strategist.

Welch retained separate Air Force Logistics and Air Force Systems Commands. He also kept acquisitions personnel under his command, rather than just the Secretary's. These steps provided two things: professional acquisitions personnel focused solely on research and development, and uniformed oversight of acquisitions programs and decisions. Welch felt that the Secretary of the Air Force, a strong believer in the concept of "cradle-to-grave" acquisitions, simply waited until he retired to convince the next Chief of Staff to combine AFLC and AFSC. The two commands were combined on 1 July 1992 during McPeak's service-wide reorganization.²⁶ The new command became Air Force Materiel Command, which was located in the former headquarters of AFLC. Welch believed combining the missions would cause logistics to

²⁵ Welch, interview by the author, 22 February 2012.

²⁶ Y'Blood, "Metamorphosis," 547.

become the dominant focus of the organization, with research and development suffering accordingly.²⁷

Indeed, the Air Force's acquisition efforts since the combination of AFLC and AFSC have become degraded. Numerous attempts have been undertaken to reform the acquisition system since Welch retired, all with frustrating results.²⁸ Some believe that joint acquisitions, which developed from Goldwater-Nichols, are fundamentally flawed.²⁹ Others believe that the entire process of acquisitions has been politicized because the top two acquisitions officials are political appointees.³⁰ General John Shaud argues that the loss of AFSC created a dearth of general officers in the Air Force trained as engineers, but with operational backgrounds.³¹ The loss of such general officers has forced the Air Force to rely heavily on analysis of programs performed by the very contractors who market to the Air Force.³² Although Goldwater-Nichols sought to make acquisitions more cost-effective, Air Force program cost-overruns subsequent to its enactment have increased from 5.6 percent to 9.5 percent.³³ David Sorenson has argued that the attempt to streamline acquisitions has, in fact, been retarded by increased oversight and regulation.³⁴ In reality, the acquisition process is now worse than it was when Welch retired, and the endless barrage of acquisition-reform initiatives has thus far failed to correct the situation. Retaining a discrete Air Force Systems Command might not have solved the problem completely, but it arguably would have helped.

²⁷ Undated personal memoirs of Gen Larry D. Welch, provided to the author on 16 October 2011, 67.

²⁸ David S. Sorenson, *The Process and Politics of Defense Acquisition: A Reference Handbook* (Westport, CT: Praeger Security International, 2009): 142.

²⁹ Hostage, interview by the author, 2 May 2012.

³⁰ Shaud, interview by the author, 24 April 2012.

³¹ Shaud, interview by the author, 24 April 2012.

³² Shaud, interview by the author, 24 April 2012.

³³ Sorenson, *The Process and Politics of Defense Acquisition*, 154.

³⁴ Sorenson, *The Process and Politics of Defense Acquisition*, 161.

The second effect of Goldwater-Nichols Welch attempted to mitigate was that of the joint-personnel-management provision. Welch expended significant effort to eliminate careerism in the Air Force through Officer Evaluation System (OES) reform. But the joint personnel management provision created pervasive incentives for officers to pursue the joint-specialty track. These incentives flowed from the requirement for services to promote joint-specialty officers at rates equivalent to those of their headquarters-staff personnel. Shaud opines that the resulting dynamic of Air Force officers leaving their primary career field prematurely has the strong potential to reduce their service competencies.³⁵ Boyd also argues that Goldwater-Nichols has increased careerism in young officers.³⁶ The House Armed Services Committee has also recently concluded that joint PME was viewed “more relevant to enabling officers to compete for promotion into flag officer ranks than for preparing officers for joint duty assignment.”³⁷ Locher’s critique of Goldwater-Nichols agrees with the assertions of Shaud and Boyd regarding increased careerism among military officers.³⁸

Welch’s efforts to mitigate the negative effects of Goldwater-Nichols in the areas of acquisitions and joint personnel management were overcome by events after he retired. Subsequent Air Force leaders placed acquisitions in direct competition with logistics, with acquisitions being the loser. Further, the development of careerism due to joint-personnel management created a problem that can probably be solved only through a legislative amendment. Welch’s efforts postponed the onset of the negative consequences, but he had little ability to influence events in this area after his retirement.

³⁵ Shaud, interview by the author, 24 April 2012.

³⁶ General Charles G. Boyd, interview by the author, 24 February 2012.

³⁷ House, *Another Crossroads? Professional Military Education Two Decades After the Goldwater-Nichols Act and the Skelton Panel*, 111th Cong., 1st Sess., April 2010, Committee Print 111-4: 33.

³⁸ James R. Locher III, “Has It Worked? The Goldwater-Nichols Reorganization Act,” *Naval War College Review* LIV, No. 4 (Autumn 2001): 112.

Officer Evaluation and Educational Reform

During his tenure as Chief Welch also invested considerable time in both OES and PME.³⁹ He addressed careerism and PME deficiencies based on experiences spanning much of his career. Welch correctly saw that OES and PME reform required subsequent revision of the entire Officer Professional Development (OPD) framework. Although partially undercut by the Goldwater-Nichols Act, he made significant efforts to develop the systems he believed necessary for shaping the force effectively. His entire effort represented an attempt to enhance the intangible but vital quality referred to as professionalism.

Welch aimed squarely at reforming the OES and OPD from the beginning of his tenure. When evaluating the effect his efforts had on the service, it is useful to note the duration of Welch's initiatives. Importantly, the Air Force still uses the OES Welch implemented in 1988.⁴⁰ The only revisions to the system have been minor changes to the forms and elimination of some reporting requirements. The OES continues to emphasize an officer's performance as being the overriding factor in decisions about his or her career.⁴¹ Welch believed the OES he created would be lasting because it was specifically designed to be "game-proof."⁴² He succeeded, due in large part to the expertise of General Robert Dixon, the man Welch trusted more than any other about the personnel system.⁴³ A 1990 critique identified the failure of OPD to address adequately development objectives for officers during the years between commissioning and intermediate service school. Lt Col Bruce Ullman argued that overt occupational focus at junior ranks detracts from the goal of service-oriented mid-career officers.⁴⁴ To be sure,

³⁹ Hostage, interview by the author, 2 May 2012.

⁴⁰ Air Force Instruction (AFI) 36-2611, *Officer Professional Development*, 1 April 1996, 9.

⁴¹ AFI 36-2611, *Officer Professional Development*, 1 April 1996, 9.

⁴² Welch, interview by the author, 22 February 2012.

⁴³ Welch, interview by the author, 22 February 2012.

⁴⁴ Lt Col Bruce L Ullman, "Officer Professional Development for Lieutenants," *Airpower Journal* IV, no. 3 (Fall 1990): 14.

Ullman credited Welch with successfully combating “careerism,” but argued that perhaps this objective outweighed the second objective of promoting “professionalism,” leading to incomplete OPD reform regarding developmental objectives for young officers.⁴⁵ Given realistic constraints on time and resources, Welch attacked educational reform as the adjunct to OES and OPD reform, thereby addressing the professionalism concern.

Welch initiated PME reform while serving as Vice Chief, but his personal involvement as Chief of Staff created lasting effects. When he retired, many noteworthy changes in the Air University were yet to occur. Similar to Dixon as the agent of Welch’s personnel reforms, Boyd became Welch’s trusted agent for reforming Air University. Boyd clearly saw himself as the implementer of Welch’s vision to make the Air University a quality institution.⁴⁶ Boyd received continued financial support from the next two Chiefs, but noted their lack of personal interest in both the Air University’s mission and the larger purpose of education as a means of shaping the force.⁴⁷

Boyd also described a major challenge he faced in the years immediately following Welch’s retirement. McPeak informed Boyd of his intent to merge Air University with Air Training Command (ATC).⁴⁸ Boyd disagreed, arguing his case to the Chief, who postponed the merger. But after Boyd moved to his next assignment, the Chief of Staff merged the two organizations, thus sidestepping Boyd.⁴⁹ Boyd believed strongly that education and training were fundamentally different and that merging the two missions would lead to the degradation of education.⁵⁰ Welch agreed that the missions of education and training should not reside in

<http://www.airpower.au.af.mil/airchronicles/apj/apj90/fal90/2fal90.htm> (accessed 14 December 2011).

⁴⁵ Ullman, “Officer Professional Development for Lieutenants,” 1.

⁴⁶ General Charles G. Boyd, interview by the author, 24 February 2012.

⁴⁷ Boyd, interview by the author, 24 February 2012.

⁴⁸ Boyd, interview by the author, 24 February 2012.

⁴⁹ Y’Blood, “Metamorphosis,” 550.

⁵⁰ Boyd, interview by the author, 24 February 2012.

the same command.⁵¹ Boyd later described the merger as a joining of two cultures, similar to SAC and TAC, with Air University being the minority culture and ATC being the majority culture.⁵² Boyd further argued that the merger subsequently diminished Air University.⁵³

Two of Welch's particular PME initiatives were noteworthy successes. Creating the School of Advanced Airpower Studies (SAAS) was one. Today, the school is known as the School of Advanced Air and Space Studies, but it still educates "warrior scholars who have a superior ability to develop, evaluate, and employ airpower."⁵⁴ This school also graduates officers in greater numbers than Welch imagined. It recently received accreditation to award doctoral degrees in military strategy to officers chosen to continue their studies.⁵⁵ The other notable success has been the Joint Flag Officer Warfighting Course (JFOWC). Again, JFOWC continues today with the mission to "prepare selected flag officers for leadership responsibilities in planning and executing joint theater-level and joint-task-force-warfare operations."⁵⁶

Welch's and Boyd's efforts did not solve all the Air University's challenges. In 2010, the House Armed Services Committee conducted a follow-up study to the 1989 Skelton Report. The committee found several disturbing trends at the Air University. It identified overly complex organizational structures resulting in increased delay in critical decision-making.⁵⁷ The report described two major organizational deficiencies, the merger of Air University with ATC and the creation of the

⁵¹ General Larry D. Welch, e-mail to the author, 2 May 2012.

⁵² Boyd, interview by the author, 24 February 2012.

⁵³ Boyd, interview by the author, 24 February 2012.

⁵⁴ AFI 36-2611, *Officer Professional Development*, 1 April 1996, 8.

⁵⁵ Rebecca Sheldon, "School of Advanced Air and Space Studies featured at review board," Maxwell Air Force Base, 12 Nov 2010, <http://www.maxwell.af.mil/news/story.asp?id+123230641> (accessed 15 May 2012).

⁵⁶ Curtis E. LeMay Center for Doctrine Development and Education, "JFOWC Information Guide," <http://www.cadre.au.af.mil/content/jfowc2.htm>, (accessed 15 May 2012).

⁵⁷ House, *Another Crossroads?*, 106.

Spaatz Center within the Air University.⁵⁸ The report also noted that existence of both a Chief Academic Officer and a Dean within each PME institution complicated syllabus construction, confused responsibilities, and wasted resources.⁵⁹ The report also found that faculty quality, an issue of considerable importance in the Skelton Report, had deteriorated, noting rapid turnover among commanders and generally weak credentials among military instructors.⁶⁰ But none of these deficiencies can be held at the feet of either Welch or Boyd.

Welch clearly possessed a wide, far-reaching vision for force-shaping in the Air Force. He recognized the importance of combatting careerism and establishing an OPD to develop officers into future strategic thinkers. His ways included the shrewd choice of trusted agents to carry out reforms within the personnel and education systems. The extent to which his reforms succeeded is evidenced by the continued success of his two most significant programs 20 years after he retired. Unfortunately, the effectiveness of Air University as a whole has been at least partially undermined due to misguided decisions by several of Welch's and Boyd's successors.

Summary Conclusions

The collection of findings developed by this study, coupled with a brief glimpse of Welch's influence 20 years after he retired, reveal several critical insights. Foremost among them, Welch was a gifted strategist. Yarger describes strategy as "future oriented and problem defining and avoiding, as opposed to problem solving."⁶¹ Welch clearly possessed the ability to solve problems, skillfully employing his strong analytical

⁵⁸ House, *Another Crossroads?*, 106.

⁵⁹ House, *Another Crossroads?*, 107.

⁶⁰ House, *Another Crossroads?*, 114-119.

⁶¹ Harry, R. Yarger, *Strategy and the National Security Professional: Strategic Thinking and Strategy Formulation in the 21st Century* (Westport, CT: Praeger, 2008), 10.

skills.⁶² Furthermore, his beliefs about building a better Air Force enabled him to avoid decisions that created problems later.

The decision to merge organizations with disparate missions in the massive reorganization in the early 1990s created long-term adverse consequences for the service and the nation. Welch's belief in there being two fundamental missions of the Air Force, strategic-nuclear deterrence and supporting the joint fight, never led him even to consider merging SAC and TAC.⁶³ The merger of AFLC and AFSC created tension between a short-term logistics focus and a long-term research-and-development focus in the same organization. Welch believed strongly that those organizations had to remain separate, but his belief was not shared by his successor.⁶⁴ The subsequent merger contributed, in part, to poor acquisitions execution in the new century. The merger of Air University with ATC also created competition between a long-term education focus and a short-term training focus. The merger was the result of a different opinion by a future Chief of Staff who did not share Welch's keen understanding of education being a critical enabler of future Air Force health.

Welch's knack for forward-focused, problem-avoiding strategic formulation was noteworthy. Shaud lauded Welch's critical-thinking skills, emphasizing his ability to identify critical information gaps and enlist the support of experts to fill them.⁶⁵ Welch received considerable mentorship in strategy formulation from Generals Robert Dixon and Bill Creech. He said that he "learned a lot and fast" while working for each of them.⁶⁶ One crucial lesson derived from Welch's involvement with the decision to sacrifice readiness in support of TAC modernization efforts under Dixon. Welch described the decision as the right one and

⁶² Shaud, interview by the author, 24 April 2012.

⁶³ Welch, e-mail to the author, 2 May 2012.

⁶⁴ Welch, e-mail to the author, 2 May 2012.

⁶⁵ Shaud, interview by the author, 24 April 2012.

⁶⁶ Welch, interview by the author, 22 February 2012.

absolutely needed.⁶⁷ Their error, however, derived from their mistaken belief that readiness would be easy to get back, when in fact it was more difficult than modernization.⁶⁸ This lesson would remain with Welch from the late 1970s through the remainder of his career, coloring his decisions with respect to building a better Air Force. His emphasis on acquisitions, education, and strategic nuclear deterrence represented a firm grasp of long-term, strategically important tasks. Welch clearly did not fall victim to Herbert Simon's observation that "short term thinking drives out long term strategy, every time."⁶⁹ Nor did he succumb to what Paul Bracken called the "tyranny of small decisions."⁷⁰ Throughout his tenure, Welch demonstrated clear vision and informed imagination for crafting ways that reconciled ends and means, successfully matching them in strategic arms modernization and arms control, implementation of the Goldwater-Nichols Act, and OES and PME reform.

Reflecting later on his tenure as Chief of Staff, Welch made several astute observations. First, he emphasized the greater authority he had as Chief of Staff compared to present day Chiefs, particularly with respect to making budget decisions.⁷¹ Welch had the ability to reduce force size or move money among programs to implement his strategy. Such decisions today meet with intense Congressional scrutiny and frequently require Secretarial or Congressional approval. Second, he believed strongly in his responsibility to the institution, a feeling derived from the size of his constituency.⁷² Welch served over a half-million Air Force officers and enlisted personnel. Realization of the obligation to serve these people nurtured in him the desire to be well prepared for decisions he would have to make as Chief of Staff. His constant drive for

⁶⁷ Welch, interview by the author, 22 February 2012.

⁶⁸ Welch, interview by the author, 22 February 2012.

⁶⁹ Quoted in Paul Bracken, "Net Assessment: A Practical Guide," *Parameters* (Spring, 2006), 93.

⁷⁰ Bracken, "Net Assessment," 96.

⁷¹ Welch, interview by the author, 22 February 2012.

⁷² Welch, interview by the author, 22 February 2012.

preparation created a lasting impact on at least one officer who served under him during his tenure as Chief.⁷³

The third observation Welch made about his career was that his greatest success as Chief of Staff was “keeping the modernization program on track.”⁷⁴ He emphasized that the commitment to modernization stemmed from the lessons derived from his experience in Vietnam.⁷⁵ The decision to sacrifice force structure in order to enhance modernization and readiness also derived from his understanding of the paradigmatic shift in lethality of the new systems being fielded.⁷⁶ Welch was committed to the mission of “ensuring that the next time airmen fought they would fight with the right stuff.”⁷⁷ The Air Force received the opportunity to fight shortly after Welch retired. On the eve of Operation DESERT STORM, then Chief of Staff General Merrill McPeak penned a letter to General Bill Creech ascribing him primary responsibility for the upcoming airpower performance.⁷⁸ Creech, however, quickly emphasized in a message to Welch that he deserved more credit for his innovative continuation of reforms that built a quality institution.⁷⁹

Reflecting on his tenure nearly 22 years after retirement, Welch “emphasized that any Chief’s effectiveness depends on a dedicated and competent Air Staff, a close relationship with the Secretary and Secretariat, and a productive - even when contentious - relationship with OSD. Welch considered himself blessed in all three areas. Many of the two and three-star generals that served on his Air Staff rose to four-star rank. Of note, his Executive Officer would become the 16th Air Force

⁷³ Hostage, interview by the author, 2 May 2012.

⁷⁴ Welch, interview by Ahmann and Haulman, transcript, 345.

⁷⁵ Welch, interview by Ahmann and Haulman, transcript, 345.

⁷⁶ Welch, interview by the author, 22 February 2012.

⁷⁷ Welch, interview by Ahmann and Haulman, transcript, 345.

⁷⁸ Lt Col James C Slife, *Creech Blue: Gen Bill Creech and the Reformation of the Tactical Air Forces, 1978-1984* (Maxwell Air Force Base, AL: Air University Press, 2004): 1.

⁷⁹ Gen Bill Creech, “Letter to Gen Larry D. Welch regarding topics covered in *Prodigal Soldiers.*” 168.7339-1676, IRIS No. 01161652, in the USAF Collection AFHRA.

Chief of Staff, and an aide would become Commander, Air Combat Command.”⁸⁰

As of this writing, the Air Force continues to reap the rewards of Welch’s strategic decisions. It is also attempting to recapture the organizational excellence that existed at the time of his retirement. One serving general officer he mentored described him as “a great Chief.”⁸¹ His propensity for strategic thinking, coupled with his constant drive to be prepared and his sense of professional obligation to the Air Force, made multiple, positive contributions to the service. Those that have endured have borne continued fruit. Several that were overturned have produced less-than-optimal results. Yarger describes a good leader as providing “the necessary vision, inspiration, organization skills, direction, and personal leadership to enable others to act in a focused and coherent manner.”⁸² Welch achieved those things through his successful posturing of the Air Force in a time of significant turmoil and change. He attributed his success to the dedicated application of three questions his grandfather told him to apply to all decisions in his life: “What have we here? How would I like this to end? What can I do to be on that path?”⁸³ Welch’s legacy thus derives from his success as a strategist and from his noteworthy efforts to build an Air Force poised to create future strategists to follow in his steps.

Men like Larry D. Welch, who possess the requisite qualities for consistently sound strategic decision-making, emerge infrequently. The Air Force must maintain the ability to recognize the intellectual and moral qualities of gifted strategists. Failing to recognize and advance personnel who demonstrate such qualities will create long-term, negative consequences for the nation. Superior intellect; inspired performance; and a broad, far-reaching vision that foresees the long-term

⁸⁰ Welch, e-mail to the author, 24 May 2012.

⁸¹ Hostage, interview by the author, 2 May 2012.

⁸² Yarger, *Strategy and the National Security Professional*, 14.

⁸³ Welch, interview by the author, 22 February 2012.

consequences of decisions, coupled with a dedication to interdisciplinary education, are many of the marks of a good strategist. In short, the Air Force would do well to identify, nurture, and advance leaders like General Larry D. Welch.



Bibliography

Books

Boyne, Walter J. *Beyond the Wild Blue: A History of the U.S. Air Force*. New York, NY: St. Martin's Griffin, 1997.

Clausewitz, Carl. *On War*. Trans. and ed. Michael Howard and Peter Paret. Princeton, NJ: Princeton University Press, 1984.

Dolman, Everett Carl. *Pure Strategy: Power and Principle in the space and information age*. New York, NY: Frank Cass, 2005.

Donnini, Frank P. *Battling for Bombers: The U.S. Air Force Fights for Its Modern Strategic Aircraft Programs*. Westport, CT: Greenwood Press, 2000.

Drew, Dennis M. *Recapitalizing the Air Force Intellect: Essays on War, Airpower, and Military Education*. Maxwell Air Force Base, AL: Air University Press, 2008.

Freedman, Lawrence. *The Evolution of Nuclear Strategy*, 3rd ed. New York, NY: Palgrave Macmillan, 2003.

Futrell, Robert F. *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force*. Vol. 2, 1961-1984. Maxwell Air Force Base, AL: Air University Press, 1989.

Gray, Colin S. *Explorations in Strategy*. Westport, CT: Praeger, 1996.

Lambeth, Benjamin S. *The Transformation of American Air Power*. Ithaca, NY: Cornell University Press, 2000.

Locher, James R., III. *Victory on the Potomac: The Goldwater-Nichols Act Unifies the Pentagon*. College Station, TX: Texas A&M University Press, 2002.

Meilinger, Col Phillip S, ed. *The Paths of Heaven: The Evolution of Airpower Theory*. Maxwell Air Force Base, AL: Air University Press, 1997.

Nalty, Bernard C., ed. *Winged Shield, Winged Sword: A History of the United States Air Force*. Washington, DC: Air Force History and Museums Program, 1997.

Olsen, John A. *John Warden and the Renaissance of American Air Power*. Washington, DC: Potomac Books, Inc., 2007.

Schelling, Thomas C. *Arms and Influence*. New Haven, CT: Yale University Press, 2008.

Simpson, Christopher. *National Security Directives of the REAGAN & BUSH Administrations: The Declassified History of U.S. Political & Military Policy, 1981-1991*. San Francisco, CA: Westview Press, 1995.

Slife, Lt Col James C. *Creech Blue: Gen Bill Creech and the Reformation of the Tactical Air Forces, 1978-1984*. Maxwell Air Force Base, AL: Air University Press, 2004.

Smith, James M., and Gwendolyn Hall, eds. *Milestones in Strategic Arms Control, 1945-2000: United States Air Force Roles and Outcomes*. Maxwell AFB, AL: Air University Press, September 2002.

Sorenson, David S. *The Process and Politics of Defense Acquisition: A Reference Handbook*. Westport, CT: Praeger Security International, 2009.

Spinney, Franklin C. *Defense Facts of Life: The Plans/Reality Mismatch*. Boulder, CO: Westview Press, 1985.

Winton, Harold R. "The Creation and Sustainment of Advanced Warfighting Institutions." In *Warfighting and Ethics: Selected Papers from the 2003 and 2004 Rowell Seminars*, edited by Russell Parkin, 7-31. Canberra: Land Warfare Studies Centre, 2005.

Worden, Col Mike. *Rise of the Fighter Generals*. Maxwell Air Force Base, AL: Air University Press, 1998.

Yarger, Harry R. *Strategy and the National Security Professional: Strategic Thinking and Strategy Formulation in the 21st Century*. Westport, CT: Praeger Security International, 2008.

Periodicals

"Airman's interview this month: Air Force Chief of Staff General Welch." *Airman* 32 (Dec 1988): 8-9.

"Airman's interview this month: Chief of Staff G. Larry D. Welch (Subject: Enlisted Evaluation System)." *Airman* 33, no. 4 (Apr 1989): 8-9.

"Airman's interview this month: Gen Larry D. Welch, Chief of Staff." *Airman* 34, no. 5 (May 1990): 8-9.

"Budget and benefits top leaders' agenda--service chief faces double challenge of ensuring defense, members' morale: interview." *Air Force Times* 48 (28 Mar 1988): 14.

"General Larry D. Welch speaks out: interview." *National Guard* 42 (Feb 1988): 54-56.

"Modernizing strategic forces: The year ahead." *Airman* 31 (Feb 1987): 14.

"United States Air Force Air Staff." *Air Force Magazine* 70 (Sep 1987): 114.

"Welch speaks out on tactics, strategy: Interview with Gen Larry D. Welch." *Air Force Times* 49, no. 44 (14 Nov 1988): 26.

Adams, Gordon and Stephen Alexis Cain. "Defense Dilemmas in the 1990s." *International Security* 13, no. 4 (Spring, 1989): 5-15.

Adelman, Kenneth L. "Why Verification is More Difficult (and Less Important)." *International Security* 14, no. 4 (Spring, 1990): 141-146.

Art, Robert J. "A Defensible Defense: America's Grand Strategy after the Cold War." *International Security* 15, no. 4 (Spring, 1991): 5-53.

Aspin, Les. "What are the Russians up to?" *International Security* 3, no. 1 (Summer, 1978): 30-54.

Ball, Desmond, and Robert C. Toth. "Revising the SIOP: Taking War-Fighting to Dangerous Extremes." *International Security* 14, no. 4 (Spring, 1990): 65-92.

Batezel, Lt Col Anthony Lynn. "Performance: It's what the revised Officer Evaluation System is all about." *Airman* 32 (Apr 1988): 19-24.

_____. "The ABC's of OPD." *Airman* 32 (December 1988): 24-27.

Bexfield, Jim, and Bob Sheldon. "Interview with General Larry D. Welch." *Military Operations Research* 9, no. 4 (2004): 7-27.

Blechman, Barry M., and Victor A. Utgoff. "The Macroeconomics of Strategic Defenses." *International Security* 11, no. 3 (Winter, 1986-1987): 33-70.

Bloomfield, Lincoln P. and Harlan Cleveland. "A Strategy for the United States." *International Security* 2, no. 4 (Spring, 1978): 32-55.

Bracken, Paul. "Net Assessment: A Practical Guide." *Parameters* (Spring, 2006): 90-100.

Brodie, Bernard. "On the Objectives of Arms Control." *International Security* 1, no. 1 (Summer, 1976): 17-36.

_____. "The Development of Nuclear Strategy." *International Security* 2, no. 4 (Spring, 1978): 65-83.

Brown, Michael E. "The U.S. Manned Bomber and Strategic Deterrence in the 1990s." *International Security* 14, no. 2 (Autumn, 1989): 5-46.

_____. "The Case against the B-2." *International Security* 15, no. 1 (Summer, 1990): 129-153.

Bull, Hedley. "Arms Control and World Order." *International Security* 1, no. 1 (Summer, 1976): 3-16.

Bundy, McGeorge. "Maintaining Stable Deterrence." *International Security* 3, no. 3 (Winter, 1978-1979): 5-16.

Burt, Richard. "Reassessing the Strategic Balance." *International Security* 5, no. 1 (Summer, 1980): 37-52.

Canan, James W. "Powerful force for peace (speakers at the AFA Convention take stock of the nation's defense)." *Air Force Magazine* 70 (Nov 1987): 94-97.

_____. "Storm flags on the budget front--events beyond military control may put US defense capability at risk in the near future." *Air Force Magazine* 71 (Jan 1988): 98-101.

_____. "Strategy that works (speakers at AFA Convention warn against relaxing US strength)." *Air Force Magazine* 71 (Nov 1988): 102-104.

Carnesale, Albert and Charles Glaser. "ICBM Vulnerability: The Cures are Worse Than the Disease." *International Security* 7, no. 1 (Summer, 1982): 70-85.

Chayes, Antonia Handler and Abram Chayes. "From Law Enforcement to Dispute Settlement: A New Approach to Arms Control Verification." *International Security* 14, no. 4 (Spring, 1990): 147-164.

Correll, John T. "Future of the ICBM." *Air Force Magazine* 70 (Jul 1987): 50-51.

Cutler, Lloyd N. and Roger C. Molander. "Is There Life after Death for SALT?" *International Security* 6, no. 2 (Autumn, 1981): 3-20.

Dalton, Pat. "Gen Larry D. Welch: Better pay alone won't keep pilots." *Air Force Times* 47 (18 May 1987): 1.

_____. "Gen. Larry D. Welch defends Peacekeeper, B-1B programs." *Air Force Times* 48 (21 Sep 1987): 18.

Delaney, William P. "Air Defense of the United States: Strategic Missions and Modern Technology." *International Security* 15, no. 1 (Summer, 1990): 181-211.

Dougherty, Russell E. "The Value of ICBM Modernization." *International Security* 12, no. 2 (Autumn, 1987): 163-172.

Dudzinsky, S. J., Jr and James Digby. "New Technology and Control of Conventional Arms: Some Common Ground." *International Security* 1, no. 4 (Spring, 1977): 143-159.

Dunn, Lewis A. "Arms Control Verification: Living with Uncertainty." *International Security* 14, no. 4 (Spring, 1990): 165-175.

Ellsworth, Robert F. "Maintaining U.S. Security in an Era of Fiscal Pressure." *International Security* 13, no. 4 (Spring, 1989): 16-24.

_____. "New Imperatives for the Old Alliance." *International Security* 2, no. 4 (Spring, 1978): 132-148.

Ermarth, Fritz W. "Contrasts in American and Soviet Strategic Thought." *International Security* 3, no. 2 (Autumn, 1978): 138-155.

Ewing, Lee. "(Gen) Welch: Deeper cuts would increase ousters." *Air Force Times* 50, no. 42 (28 May 1990): 4.

Falk, Richard. "Nuclear Weapons Proliferation As a World Order Problem." *International Security* 1, no. 3 (Winter, 1977): 79-93.

Feiveson, Harold A. and Frank N. von Hippel. "Beyond START: How to Make Much Deeper Cuts." *International Security* 15, no. 1 (Summer, 1990): 154-180.

Fetter, Steve. "Ballistic Missiles and Weapons of Mass Destruction: What is the Threat? What Should be Done?" *International Security* 16, no. 1 (Summer, 1991): 5-42.

Forsberg, Randall. "Abolishing Ballistic Missiles: Pros and Cons." *International Security* 12, no. 1 (Summer, 1987): 190-196.

Fridling, Barry E., and John R. Harvey. "On the Wrong Track? An Assessment of MX Rail Garrison Basing." *International Security* 13, no. 3 (Winter, 1988-1989): 113-141.

Fulghum, David. "Gen. Larry D. Welch 'convinced' rail garrison will be used." *Air Force Times* 49 (14 Nov 1988): 33.

_____. "(Gen) Welch: Launching of B-2s wouldn't surprise Soviets." *Air Force Times* 50, no. 30 (5 Mar 1990): 8.

_____. "Welch: B-2 force capacity to be 2,000 warheads." *Air Force Times* 48 (30 May 1988): 39.

Gaddis, John Lewis. "International Relations Theory and the End of the Cold War." *International Security* 17, no. 3 (Winter, 1992-1993): 5-58.

Gansler, Jacques S. "Can the Defense Industry Respond to the Reagan Initiatives?" *International Security* 6, no. 4 (Spring, 1982): 102-121.

_____. "Needed: A U.S. Defense Industrial Strategy." *International Security* 12, no. 2 (Autumn, 1987): 45-62.

Garthoff, Raymond L. "Mutual Deterrence and Strategic Arms Limitation in Soviet Policy." *International Security* 3., no. 1 (Summer, 1978): 112-147.

_____. "Negotiating with the Russians: Some Lessons from SALT." *International Security* 1, no. 4 (Spring, 1977): 3-24.

_____. "On Estimating and Imputing Intentions." *International Security* 2, no. 3 (Winter, 1978): 22-32.

Garwin, Richard L. "Effective Military Technology for the 1980s." *International Security* 1, no. 2 (Autumn, 1976): 50-77.

_____. "Launch Under Attack to Redress Minuteman Vulnerability?" *International Security* 4, no. 3 (Winter, 1979-1980): 117-139.

Ginovsky, John. "AF pulls out all the stops for (Gen) Welch send-off." *Air Force Times* 50, no. 48 (9 Jul 1990): 6.

_____. "Briefer staff college to train more majors." *Air Force Times* 48 (20 Jun 1988): 1.

_____. "Gen Larry D. Welch: 'Bachelor' tour extensions first to go." *Air Force Times* 47 (18 May 1987): 6.

_____. "Leaders push for raises, bonuses in testimony." *Air Force Times* 48 (21 Mar 1988): 8.

_____. "New review boards may boost top officers." *Air Force Times* 48 (4 Apr 1988): 3.

_____. "Officer evaluation in 3 steps approved." *Air Force Times* 48 (28 Mar 1988): 1.

Glaser, Charles L. "Nuclear Policy without an Adversary: U.S. Planning for the Post-Soviet Era." *International Security* 16, no. 4 (Spring, 1992): 34-78.

Graham, CMSgt Vickie M. "Airman express this month: Gen. Welch answers B-1 critics." *Airman* 32 (Aug 1988): 41.

Gray, Colin S. and Jeffrey G. Barlow. "Inexcusable Restraint: The Decline of American Military Power in the 1970s." *International Security* 10, no. 2 (Autumn, 1985): 27-69.

Gray, Colin S. "Nuclear Strategy: The Case for a Theory of Victory." *International Security* 4, no. 1 (Summer, 1979): 54-87.

Hafner, Donald L. "Choosing Targets for Nuclear Weapons." *International Security* 11, no. 4 (Spring, 1987): 135-140.

Hicks, Donald A. "ICBM Modernization: Consider the Alternatives." *International Security* 12, no. 2 (Autumn, 1987): 173-181.

Hoeber, Francis P. "How Little is Enough?" *International Security* 3, no. 3 (Winter, 1978-1979): 53-73.

Hoffman, Fred S. "The SDI in U.S. Nuclear Strategy: Senate Testimony." *International Security* 10, no. 1 (Summer, 1985): 13-24.

Holloway, David. "State, Society, and the Military under Gorbachev." *International Security* 14, no. 3 (Winter, 1989-1990): 5-24.

Holzman, Franklyn D. "Are the Soviets Really Outspending the U.S. on Defense?" *International Security* 4, no. 4 (Spring, 1980): 86-104.

Hunsinger, Major Nate. "Mentorship: Growing Company Grade Officers." *Military Review*, Sep-Oct 2004, 78-85.

Hyland, William G. "SALT and Soviet-American Relations." *International Security* 3, no. 2 (Autumn, 1978): 156-162.

Jervis, Robert. "The Political Effects of Nuclear Weapons: A Comment." *International Security* 13, no. 2 (Autumn, 1988): 80-90.

Kelleher, Catherine McArdle. "The Present as Prologue: Europe and Theater Nuclear Modernization." *International Security* 5, no. 4 (Spring, 1981): 150-168.

Klein, Jean. "France, NATO, and European Security." *International Security* 1, no. 3 (Winter, 1977): 21-41.

Komer, Robert W. "What 'Decade of Neglect?'" *International Security* 10, no. 2 (Autumn, 1985): 70-83.

Korb, Lawrence J., and Linda P. Brady. "Rearming America: The Reagan Administration Defense Program." *International Security* 9, no. 3 (Winter, 1984-1985): 3-18.

Korb, Lawrence J. "Spending without Strategy: The FY 1988 Annual Defense Department Report." *International Security* 12, no. 1 (Summer, 1987): 166-174.

Kugler, Jacek, A. F. K. Organski, and Daniel J. Fox. "Deterrence and the Arms Race: The Impotence of Power." *International Security* 4, no. 4 (Spring, 1980): 105-138.

Lambeth, Benjamin S. "The Political Potential of Soviet Equivalence." *International Security* 4, no. 2 (Autumn, 1979): 22-39.

Lepingwell, John W. R. "Start II and the Politics of Arms Control in Russia." *International Security* 20, no. 2 (Autumn, 1995): 63-91.

Lightbody, Andy. "Chief of Staff USAF General Larry D. Welch: interview." *International Combat Arms* 5 (Sep 1987): 53-55.

Long, Clarence D. "Nuclear Proliferation: Can Congress Act in Time?" *International Security* 1, no. 4 (Spring, 1977): 52-76.

Locher, James R., III. "Has it Worked? The Goldwater-Nichols Reorganization Act." *Naval War College Review* LIV, no. 4 (Autumn 2001): 95-115.

Lodal, Jan M. "SICBM Yes, HML No." *International Security* 12, no. 2 (Autumn, 1987): 182-186.

Lynn, William J. and Barry R. Posen. "The Case for JCS Reform." *International Security* 10, no. 3 (Winter, 1985-1986): 69-97.

May, Michael M., George F. Bing, and John D. Steinbruner. "Strategic Arsenals After START: The Implications of Deep Cuts." *International Security* 13, no. 1 (Summer, 1988): 90-133.

Maze, Rick and David Fulghum. "Generals differ on effects of INF (Treaty)." *Air Force Times* 48 (15 Feb 1988): 7.

McCarthy, John F., Jr. "The Case for the B-1 Bomber." *International Security* 1, no. 2 (Autumn, 1976): 78-97.

McNaugher, Thomas L. "Weapons Procurement: The Futility of Reform." *International Security* 12, no. 2 (Autumn, 1987): 63-104.

Metzger, Robert and Paul Doty. "Arms Control Enters the Gray Area." *International Security* 3, no. 3 (Winter, 1978-1979): 17-52.

Meyer, Stephen M. "The Sources and Prospects of Gorbachev's New Political Thinking on Security." *International Security* 13, no. 2 (Autumn, 1988): 124-163.

Millett, Allan R., Williamson Murray, and Kenneth H. Watman. "The Effectiveness of Military Organizations." *International Security* 11, no. 1 (Summer, 1986): 37-71.

Moran, Theodore H. "Towards a Strategy of Defense Spending." *International Security* 12, no. 3 (Winter, 1987-1988): 215-218.

Mountbatten, Louis. "A Military Commander Surveys the Nuclear Arms Race." *International Security* 4, no. 3 (Winter, 1979-1980): 3-5.

Mustin, Henry C. "The Sea-Launched Cruise Missile: More Than a Bargaining Chip." *International Security* 13, no. 3 (Winter, 1988-1989): 184-190.

Nacht, Michael. "In the Absence of SALT." *International Security* 3, no. 3 (Winter, 1978-1979): 126-137.

Nitze, Paul. "The Relationship of Strategic and Theater Nuclear Forces." *International Security* 2, no. 2 (Autumn, 1977): 122-132.

Oelrich, Ivan. "The Changing Rules of Arms Control Verification: Confidence is Still Possible." *International Security* 14, no. 4 (Spring, 1990): 176-184.

O'Keefe, Bernard J. "The SDI and American R&D." *International Security* 11, no. 2 (Autumn, 1986): 190-192.

Owens, MacKubin Thomas. "The Hollow Promise of JCS Reform." *International Security* 10, no. 3 (Winter, 1985-1986): 98-111.

Perle, Richard. "Reykjavik as a Watershed in U.S.-Soviet Arms Control." *International Security* 12, no. 1 (Summer, 1987): 175-178.

Rice, Donald. "The Manned Bomber and Strategic Deterrence: The U.S. Air Force Perspective." *International Security* 15, no. 1 (Summer, 1990): 100-128.

Risse-Kappen, Thomas. "Did 'Peace Through Strength' End the Cold War? Lessons from INF." *International Security* 16, no. 1 (Summer, 1991): 162-188.

Ruina, Jack. "More is Not Better." *International Security* 12, no. 2 (Autumn, 1987): 187-192.

Sartori, Leo. "Will SALT II Survive?" *International Security* 10, no. 3 (Winter, 1985-1986): 147-174.

Schear, James A. "Arms Control Treaty Compliance: Buildup to a Breakdown?" *International Security* 10, no. 2 (Autumn, 1985): 141-182.

Schelling, Thomas C. "Abolition of Ballistic Missiles." *International Security* 12, no. 1 (Summer, 1987): 179-183.

Schlesinger, James R. "The Evolution of American Policy towards the Soviet Union." *International Security* 1, no. 1 (Summer, 1976): 37-48.

Selin, Ivan. "Looking Ahead to SALT III." *International Security* 5, no. 3 (Winter, 1980-1981): 171-185.

Sienkiewicz, Stanley. "SALT and Soviet Nuclear Doctrine." *International Security* 2, no. 4 (Spring, 1978): 84-100.

Slocombe, Walter. "The Countervailing Strategy." *International Security* 5, no. 4 (Spring, 1981): 18-27.

Sloss, Leon. "A World without Ballistic Missiles." *International Security* 12, no. 1 (Summer, 1987): 184-189.

Snyder, Jack, and Scott D. Sagan. "The Origins of Offense and the Consequences of Counterforce." *International Security* 11, no. 3 (Winter, 1986-1987): 187-198.

Steiner, James E. and Franklyn D. Holzman. "CIA Estimates of Soviet Military Spending." *International Security* 14, no. 4 (Spring, 1990): 185-198.

Stockton, Paul N. "The New Game on the Hill: The Politics of Arms Control and Strategic Force Modernization." *International Security* 16, no. 2, (Autumn, 1991): 146-170.

Stoertz, Howard, Jr. "Monitoring a Nuclear Freeze." *International Security* 8, no. 4 (Spring, 1984): 91-110.

Stohry, Lt Col Kimble D. "The Douhet Society: A Recipe for Your Professional Development Program?" *Airpower Journal* VII, no. 1 (Spring 1993): 1-16.
<http://www.airpower.au.af.mil/airchronicles/apj/apj93/spr93/stohry.htm> (accessed 14 December 2011).

Symington, Stuart. "The Washington Nuclear Mess." *International Security* 1, no. 3 (Winter, 1977): 71-78.

Talbott, Strobe. "Scrambling and Spying in SALT II." *International Security* 4, no. 2 (Autumn, 1979): 3-21.

Taylor, Maxwell D. "The United States—A Military Power Second to None?" *International Security* 1, no. 1 (Summer, 1976): 49-55.

Toomay, John C. "Strategic Forces Rationale—A Lost Discipline?" *International Security* 12, no. 2 (Autumn, 1987): 193-202.

Ullman, Lt Col Bruce L. "Officer Professional Development for Lieutenants." *Airpower Journal* IV, no. 3 (Fall 1990): 1-18. <http://www.airpower.au.af.mil/airchronicles/apj/apj90/fal90/2fal90.htm> (accessed 14 December 2011).

Utgoff, Victor. "In Defense of Counterforce." *International Security* 6, no. 4 (Spring, 1982): 44-60.

Van Evera, Stephen. "Primed for Peace: Europe after the Cold War." *International Security* 15, no. 3 (Winter, 1990-1991): 7-57.

Weber, Steve. "(Gen) Welch acknowledges he'll retire in June." *Air Force Times* 50, no. 28 (19 Feb 1990): 3.

Weiszacker, Carl-Friedrich von. "Can a Third World War be Prevented?" *International Security* 5, no. 1 (Summer, 1980): 198-205.

Welch, Gen Larry D. "Air Force--aerospace defense for the future." *Defense*, May-Jun 1989, 27-33.

_____. "A Focus 'far into the future'--the Air Force in the 21st century." *Sea Power* 30 (Apr 1987): 20.

_____. "Global reach in a non-tranquil world--the Air Force's board spectrum of capabilities." *Sea Power* 33, no. 4 (Apr 1990): 49-51.

_____. "NATO rapid reinforcement--a key to conventional deterrence." *NATO's Sixteen Nations* 32 (Feb-Mar 1987): 114-116.

_____. "Quality equipment for a quality force--with a strong helping hand from the industrial base." *Sea Power* 31 (Apr 1988): 39.

Welch, Jasper. "Assessing the Value of Stealthy Aircraft and Cruise Missiles." *International Security* 14, no. 2 (Autumn, 1989): 47-63.

Williams, Cindy. "Strategic Spending Choices." *International Security* 13, no. 4 (Spring, 1989): 25-35.

Willis, Grant. "Leaders fault Congress for military shortcomings." *Air Force Times* 48 (28 Sep 1987): 10.

Wood, Archie L. "Modernizing the Strategic Bomber Force without Really Trying—a Case against the B-1." *International Security* 1, no. 2 (Autumn, 1976): 98-116.

Yost, David S. "Ballistic Missile Defense and the Atlantic Alliance." *International Security* 7, no. 2 (Autumn, 1982): 143-174.

Young, Wayland. "Disarmament: Thirty Years of Failure." *International Security* 2, no. 3 (Winter, 1978): 33-50.

Zumwalt, Elmo R. "An Assessment of the Bomber-Cruise Missile Controversy." *International Security* 2, no. 1 (Summer, 1977): 47-58.

Reports

The Air Force and the Cold War. Air Force Association Special Report. Arlington, VA: Air Force Association, September 2005.

Report of the Panel on Military Education of the One Hundredth Congress of the Committee on Armed Services House of Representative. Committee Print, no. 4. Washington, DC: US Government Printing Office, 1989.

Boggs, Maj Kevin G., et al. "The Goldwater-Nichols Department of Defense Reorganization Act of 1986: An Analysis of Air Force Implementation of Title IV and Its Impact on the Air Force Officer Corps." Maxwell Air Force Base, AL: Air Command and Staff College, 1995.

Department of Defense. *DoD News Briefing with Secretary Gates from the Pentagon*, 5 June 2008.
<http://www.defense.gov/transcripts/transcript.aspx?transcriptid=4236> (accessed 10 May 2012).

Factsheet. *Air Force Global Strike Command*, 23 April 2010.
<http://www.af.mil/information/factsheets/factsheet.asp?id=16613> (accessed 10 May 2012).

Lewis, Kevin N. *What if the Reagan Defense Buildup is Over?* Santa Monica, CA: The RAND Corporation, April 1987.

Mets, David R. *Reflections of a Middling Cold Warrior: Should the Army Air Corps Be Resurrected?* Research Paper 2009-5. Maxwell Air Force Base, AL: Air Force Research Institute, December 2009.

Office of the Under Secretary of Defense (Comptroller). *National Defense Budget Estimates for FY 2012*. March 2011.
http://comptroller.defense.gov/defbudget/fy2012/FY12_Green_Book.pdf (accessed 3 May 2012).

Staff Studies

Cantrell, J.C. III., and Henry L. Andrews, Jr. *Air Command and Staff College officer requirements study*. Staff study, 10 May 1993.

Roberts, Brad. *Strategic Arms Reduction Talks (START) Issue Brief*. Congressional Research Service, 2 November 1982.

Public Documents

President. *National Security Strategy of the United States*. The White House, January 1987.

_____. *National Security Strategy of the United States*. The White House, January 1988.

_____. *National Security Strategy of the United States*. The White House, March 1990.

US House. *Reorganization of the Department of Defense: Hearings before the Committee on Armed Services*. 99th Cong., 2nd sess., 1986.

_____. *Goldwater-Nichols Department of Defense Reorganization Act of 1986: Conference Report to accompany H.R. 3622.* Report 99-824. 99th Cong., 2nd sess., 12 September 1986.

_____. *Department of Defense Appropriations for 1988: Hearings before a Subcommittee of the Committee on Appropriations.* 100th Cong., 1st sess., 1987.

_____. *DOD Reorganization Implementation: Hearings before the Investigations Subcommittee of the Committee on Armed Services.* 100th Cong., 1st sess., 1987.

_____. Congressman Ike Skelton of Missouri speaking on the House floor. "Military Strategy: Unfocused, Unstudied, Unlearned." *Congressional Record*, vol. 133, no. 155, 100th Cong., 1st sess., 6 October 1987, 8234.

_____. Congressman Ike Skelton of Missouri speaking on the House floor. "Strategy and Military Education: Concerns, Trends, and Unanswered Questions." *Congressional Record*, vol. 133, no. 168, 100th Cong., 1st sess., 26 October 1987, 8967.

_____. Congressman Ike Skelton of Missouri speaking on the House floor. "Strategy and Officer Education: The Weak Link." *Congressional Record*, vol. 133, no. 171, 100th Cong., 1st sess., 29 October 1987, 9144.

_____. Congressman Ike Skelton of Missouri speaking on the House floor. "American Strategy: A Worthy Past, An Uncertain Future." *Congressional Record*, vol. 133, no. 179, 100th Cong., 1st sess., 9 November 1987, 9842.

_____. Congressman Ike Skelton of Missouri speaking on the House floor. "The House Armed Services Committee Panel on Military Education: Focusing the Spotlight." *Congressional Record*, vol. 133, no. 186, 100th Cong., 1st sess., 19 November 1987, 10648.

_____. *Department of Defense Appropriations for 1989: Hearings before a Subcommittee of the Committee on Appropriations.* 100th Cong., 2nd sess., 1988.

_____. *Professional Military Education: Hearings before Panel on Military Education of the Committee on Armed Services.* 100th Cong., 2nd sess., 1988.

_____. *Department of Defense Appropriations for 1990: Hearings before a Subcommittee of the Committee on Appropriations.* 101st Cong., 1st sess., 1989.

_____. *National Defense Authorization Act for FY90: H.R. 2460 and Oversight of Previously Authorized Programs Hearings before the Committee on Armed Services.* 101st Cong., 1st sess., 1989.

_____. *Report of the Panel of Military Education of the Committee on Armed Services.* 101st Cong., 1st sess., 21 April 1989, Committee Print: 4.

_____. *Department of Defense Appropriations for 1991: Hearings before a Subcommittee of the Committee on Appropriations*. 101st Cong., 2nd sess., 1990.

_____. *Another Crossroads? Professional Military Education Two Decades After the Goldwater-Nichols Act and the Skelton Panel*. 111th Cong., 1st Sess., April 2010, Committee Print 111-4.

US Senate. *Report to Accompany S. 2295: Department of Defense Reorganization Act of 1986*. 99th Cong., 2nd sess., 14 April 1986.

_____. *Department of Defense Authorization for Appropriations for Fiscal Year 1987: Hearings before the Committee on Armed Services*. 99th Cong., 2nd sess., 1986.

_____. *Department of Defense Appropriations Fiscal Year 1988: Hearings before the Committee on Appropriations*. 100th Cong., 1st sess., 1987.

_____. *Department of Defense Authorization for Appropriations for Fiscal Years 1988 and 1989: Hearings before the Committee on Armed Services*. 100th Cong., 1st sess., 1987.

_____. *NATO Defense and the INF Treaty: Hearings before the Committee on Armed Services*. 100th Cong., 2nd sess., 1988.

_____. *The INF Treaty: Hearings before the Committee on Foreign Relations*. 100th Cong., 2nd sess., 1988.

_____. *Department of Defense Appropriations Fiscal Year 1989: Hearings before the Committee on Appropriations*. 100th Cong., 2nd sess., 1988.

_____. *Department of Defense Authorization for Appropriations for Fiscal Year 1989: Hearings before the Committee on Armed Services*. 100th Cong., 2nd sess., 1988.

_____. *Department of Defense Appropriations Fiscal Year 1990: Hearings before the Committee on Appropriations*. 101st Cong., 1st sess., 1989.

_____. *Department of Defense Authorization for Appropriations for Fiscal Years 1990 and 1991: ICBM Modernization Program Hearings before the Committee on Appropriations*. 101st Cong., 1st sess., 1989.

_____. *Department of Defense Authorization for Appropriations for Fiscal Years 1990 and 1991: Hearings before the Committee on Armed Services*. 101st Cong., 1st sess., 1989.

_____. *Testing and Operational Requirements for the B-2 Bomber: Hearing before the Committee on Armed Services*. 101st Cong., 1st sess., 21 July 1989.

_____. *Department of Defense Authorization for Appropriations for Fiscal Years 1991: Hearings before the Committee on Armed Services*. 101st Cong., 2nd sess., 1990.

Classified Sources

History. *Air Staff* (U). 1 January 1987-31 December 1987. (Top Secret) Information extracted and provided to the author is unclassified.

_____. *Air Force Systems Command* (U). 1 October 1985-30 September 1986. K243.01 V.1, IRIS No. 01083300, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

History. *Air Force Systems Command* (U). 1 October 1985-30 September 1986. K243.01 V.1, IRIS No. 01083300, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

_____. *Air Force Systems Command* (U). 1 October 1987-30 September 1988. K243.01 V.1, IRIS No. 01095583, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

_____. *Air Force Systems Command* (U). 1 October 1988-30 September 1989. K243.01 V.1, IRIS No. 01101756, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

_____. *Air Force Systems Command* (U). 1 October 1989-30 September 1990. K243.01 V.1, IRIS No. 01101770, in the USAF Collection, AFHRA. (Secret) Information extracted is unclassified.

Historical Research Agency

Aspin, Les. "Fact Sheet: Comparison of Costs—Midgetman, Rail-MX, and Other Strategic Systems." April 1988. K168.03-2071 part 1, IRIS No. 01136751, in the USAF Collection, AFHRA.

Creech, Gen Bill. "Letter to Gen Larry D. Welch regarding topics covered in *Prodigal Soldiers*." 168.7339-1676, IRIS No. 01161652, in the USAF Collection AFHRA.

History. *Air Force Military Personnel Center*. 1 January-31 December 1987. K141.34, IRIS No. 01110422, in the USAF Collection, AFHRA.

_____. *Air Force Military Personnel Center*. 1 January-31 December 1988. K141.34, IRIS No. 01110423, in the USAF Collection, AFHRA.

History. *Air University*. 1 January-31 December 1987. K239.01 V.1, IRIS No. 01099620, in the USAF Collection, AFHRA.

_____. *Air University*. 1 January-30 December 1988. K239.01 V.1, IRIS No. 01115078, in the USAF Collection, AFHRA.

_____. *Air University*. 1 January 1989 – 31 December 1990. K239.01 V.1, IRIS No. 01115085, in the USAF Collection, AFHRA.

_____. *Air University*. 1 January 1991 – 31 December 1992. K239.01 V.1, IRIS No. 01128533, in the USAF Collection, AFHRA.

Oral History Interview of Frank C. Carlucci, III. Conducted by Col Charles J. Gross, 11 July 1991. Typed transcript, K239.0512-2094, IRIS No. 01105669, in USAF Collection, AFHRA.

Oral History Interview of Gen Larry D. Welch. Conducted by Hugh N. Ahmann and Dr. Daniel L. Haulman, November 1993, October 1994, May 1997, and May 2000. Typed transcript, K239.0512-2126, IRIS No. 01157777, in USAF Collection, AFHRA.

Welch, Gen Larry D. "General Officer's Policy Letter." 27 Feb 1987. K168.03-633, IRIS No. 01130515, in the USAF Collection, AFHRA.

_____. "General Officer's Policy Letter." 30 Jun 1987. K168.03-634, IRIS No. 01130516, in the USAF Collection, AFHRA.

_____. "General Officer's Policy Letter." 11 Sep 1987. K168.03-635, IRIS No. 01130517, in the USAF Collection, AFHRA.

_____. "General Officer's Policy Letter." 7 Dec 1987. K168.03-636, IRIS No. 01130518, in the USAF Collection, AFHRA.

_____. "General Officer's Policy Letter." 18 Mar 1988. K168.03-637, IRIS No. 01130519, in the USAF Collection, AFHRA.

_____. "General Officer's Policy Letter." 26 Jun 1989. K168.03-639, IRIS No. 01130521, in the USAF Collection, AFHRA.

_____. "Letter to General Robert J. Dixon." 14 Jan 1987. 168.7225-88, IRIS No. 01149907, in the USAF Collection, AFHRA.

_____. "Letter to The Honorable Les Aspin." 21 April 1988. K168-03.2071 part 1, IRIS No. 01136751, in the USAF Collection, AFHRA.

Manuals, Instructions, Directives, and Other Publications

Air Force Instruction (AFI) 36-2611. *Officer Professional Development*, 1 April 1996.

Air Force Pamphlet (AFP) 36-30. *Officer Evaluation System: Your Guide To The Revised Officer Evaluation System*, 4 April 1988.

Curtis E. LeMay Center for Doctrine Development and Education.
"JFOWC Information Guide."

<http://www.cadre.au.af.mil/content/jfowc2.htm>, (accessed 15 May 2012).

Rebecca Sheldon. "School of Advanced Air and Space Studies featured at review board." Maxwell Air Force Base, 12 Nov 2010.
<http://www.maxwell.af.mil/news/story.asp?id+123230641>
(accessed 15 May 2012).

Diararies

Welch, Gen Larry D. *Undated personal memories*. Provided to the author on 16 October 2011.

Official Biography for Subject Interviews

United States Air Force Biography of General Charles G. Boyd. Available from <http://www.af.mil/news/biographies/>.

United States Air Force Biography of General Gilmary Michael Hostage III. Available from <http://www.af.mil/news/biographies/>.

United States Air Force Biography of General John A. Shaud. Available from <http://www.af.mil/news/biographies/>.

United States Air Force Biography of General Larry D. Welch. Available from <http://www.af.mil/news/biographies/>.

